

CHAPTER 14

PSYCHOLOGICAL ISSUES IN PAEDIATRIC SURGERY

Akanidomo J. Ibanga
Hannah B. Ibanga

Introduction

The last few decades have been marked by tremendous improvement in the successful performance of most paediatric surgical procedures. This improvement is in terms of both increased knowledge and skills of attending physicians and updated surgical equipment now available for a variety of procedures. This has resulted in a higher survival rate as well as a reduction in the associated risk. Despite these improvements, however, many children and parents still experience high levels of distress when children are awaiting an invasive surgical procedure.¹⁻⁴ This chapter looks at issues in paediatric surgical practice that make it stressful not only for the child awaiting surgery but also for the child's parents. We first look briefly at the classifications of surgical procedures and the sources of stress for the child and parents. We then look at the commonly reported stress-related emotional experience, first for the child and then for the parents, and how this relates to prognosis. This discussion is followed by elaborating more on the conditions in sub-Saharan African countries that contribute to possible heightened levels of stress, and we draw this chapter to its conclusion by looking at some evidence-based efforts to reduce surgery-related stress and how effective or feasible the application of these may be in the sub-Saharan health care environment.

Overview of Surgical Procedures

Many parents who may be present during ward rounds or may have overheard discussions or may have had consultations with their child's physician come across terms that refer more to the type of surgery for the child. They may thus hear the surgery being referred to as either major, minor, emergency, elective, or required. It is outside the scope of this chapter to discuss these in detail, but it suffices to briefly describe these terms here.

Major Surgery

Surgery is regarded as major when it involves the head, neck, chest, or abdomen. Examples of these would be surgical operations involving organ transplants or repair of congenital malformations, heart disease, or correction of foetal developmental problems. In comparison to other forms of surgery, this class usually involves a higher risk and longer hospital stay, both pre- and postoperatively.

Emergency (Urgent) Surgery

Emergency surgery is carried out with a focus on correcting a life-threatening condition. Examples of these would be a result of an accident (motor vehicle or many forms of domestic accidents) or where there is an intestinal obstruction or any other life-threatening condition.

Elective Surgery

Unlike the previous surgeries, elective surgery does not correct a life-threatening condition and is not an absolute necessity for the health of the child. It is, however, a surgery that is carried out with the hope of improving the child's quality of life. Surgery to remove a hernia or tonsils, as well as circumcision, would fall under this class.

Required Surgery

Any procedure that is required in order to improve the quality of life for the child is termed required surgery. Required surgery does not need to be done immediately, as is the case for emergency surgery. In this situation, more time is available to plan and prepare the child and parents involved for the surgery.

Minor Surgery

Minor surgery is a term reserved for invasive procedures that have a short recovery time. These operations can actually be carried out in an outpatient basis, or the child can go home the same day in most cases. The recovery time for the child to return to normal functioning is usually very short. Although listed as a minor procedure, it is not considered so by parents whose children are awaiting these procedures.

Stress and Anxiety

Irrespective of the class of invasive procedure a child is to undergo, many children and their parents find it stressful. LeRoy and his colleagues⁵ looked at different sources of stress for children who were awaiting an operation as well as their parents, and came up with a slightly different list for each of them. The sources of stress for children include: (1) physical harm or injury, resulting in discomfort, pain, mutilation, or death; (2) separation from parents and dealing with strangers in the absence of a familiar, trusted adult; (3) fear of the unknown; (4) uncertainty about limits and acceptable behaviour; and (5) loss of control, autonomy, and competence. In contrast, the sources of stress for parents and guardians include: (1) concern about the possibility of physical harm or injury resulting in discomfort, pain, mutilation, or death to the child; (2) alterations in the parenting role; (3) lack of information; (4) the intensive care unit (ICU) environment; and (5) postoperative changes in the child's behaviour, appearance, or emotional responses.

Anxiety is the most commonly reported stress-related emotion experienced by children awaiting surgery and their parents. Brophy and Erickson,⁶ in their survey of those awaiting elective surgery, found that 60% of the children reported being anxious. Note that this was for elective surgical procedures, which are simple and preplanned; for these children to still experience anxieties or fears of compromised physical integrity as well as death, it would be logical to assume that the reported percentage would greatly increase were we to survey those awaiting more complex surgical procedures. In the following subsections, we briefly look at the child's and parents' anxieties and how these affect surgical outcomes. We highlight our need to have a greater understanding and to develop a response to help alleviate these anxieties.

Children's Anxiety

Numerous researchers⁷⁻⁹ have found an association between preoperative anxiety and negative postsurgical outcomes. When a child is about to undergo surgery, for instance, and is to be anaesthetised, the child who is anxious at this stage is very uncooperative, often making the process more pronounced and prolonged. The greatest risk of nonco-

operative behaviour is with children between the ages of 2 and 6 years. Preoperative anxiety has also been linked to disturbances at recovery from the effects of anaesthesia.^{10–12} Disturbances in the child's postsurgical behaviour have also been recorded;^{13,14} for a small group of these children, this problem can be long lasting.

Other multiple adverse outcomes associated with the child's anxiety include increased postoperative pain and delirium^{15,16} as well as postsurgical maladaptive behavioural changes.^{17,18} Psychosocial adjustment problems are a major concern.^{19–21} Notably, these changes are not limited to those awaiting or having undergone an invasive procedure; as pointed out by Vernon,²² these changes are also evident in children who have been hospitalised without necessarily undergoing any surgical procedure.

An understanding of the effects that a child's level of anxiety has on postsurgical outcomes drives the need to direct efforts that would attempt to reduce preoperative anxiety for these children. Reducing the level of anxiety a child may have in regard to the process may help in facilitating postsurgical recovery for that child.^{23–25}

Success in reducing the level of stress experienced, however, depends on a number of factors. This would include the physician's knowledge as well as skills in working with children or liaising with their parents in reducing surgery-related anxiety. Some parents may need guidance in what to say to the child, how much detail to include, the possible presences of a parent at anaesthetic induction, and so forth. Incorporating working with parents and their children to reduce surgery-related anxiety into the routine clinical practice would help circumvent some postsurgical complications that may arise, reduce readmission rates, and shorten hospital contact days.

Parental Anxiety

As mentioned earlier, parents of children undergoing surgery often experience considerable stress themselves. Maligalig²⁶ found that parents were anxious about anaesthesia and associated risks, how the child would respond to the surgical experience, and their own inadequacy in taking care of the child when discharged from the hospital. The level of anxiety experienced by parents, however, is affected by several factors. Mothers, for instance, experience a greater degree of anxiety than do fathers.^{27,28} This may be due to maternal instinct or, as discussed later, the meaning and essence of the child in that family, and the apportioning of blame when the child becomes ill.

The anxiety experienced by parents and their ability to manage it is also related to the coping style adopted. Coping loosely refers to a parent's ability to see the problems as manageable, even in the face of its being unpleasant. When faced with a problem, over time, there are generally two response or coping behaviors—a problem-focused or an emotion-focused strategy. Thus, responses may be predominantly problem-focused or predominantly emotion-focused. People who use problem-focused strategies in coping are likely to be characterised as exhibiting approach behaviours. These individuals would seek health- and procedure-related information about the surgery and they generally would be more anxious prior to the procedure.²⁹ In contrast, people who adopt emotion-focused strategies are characterised by avoidance of health-related information and denial of the stress. These individuals are more likely to exhibit greater anxiety after the event than before it.

What this implies is that to help people cope with their anxieties, it would be best to know how they predominantly respond to problems. Once we can identify this, we can tailor interventions that are congruent with their response (coping) styles. Providing those who respond with a problem-focused strategy with information and elaborating on the medical equipment and procedure to be undertaken would help alleviate some of these anxieties. This approach, however, would have the opposite effect for those who respond with an emotion-focused strategy. For those parents, it would be best to build in activities that would enable deliberate avoidance or refocusing (distraction) from the procedure. A simple way to identify parents' predominant coping

styles in a clinical setting is to note those parents who exhibit high information-seeking behaviour or a high need to monitor the child's progress. These parents are most likely adopting a problem-focused approach and would benefit greatly from information about the procedure and what the likely outcomes and potential side effects of the procedure may be.

MacLaren and Kain,³⁰ in their comparative study of mothers of children undergoing minor outpatient surgery and other women awaiting surgery, found that the mothers of these children were more anxious than the women who themselves were undergoing minor operations, but equally as anxious as women awaiting major surgery. These findings lend credence to earlier studies,^{14,15} which found that mothers of children sought more preoperative information concerning their child's surgery than adult patients who were themselves awaiting surgery.

The focus on the parents' anxiety in regard to the child's surgical procedure is important for several reasons. As pointed out by Piira et al.,³¹ parents play a critical role in managing the child's pain in the aftermath of surgery; they are responsible for collaborating with health care professionals in making decisions and choices regarding the child's health and would need to be competent and prepared to do so. If the parents' anxiety and distress are high, their understanding may be hindered and their level of cooperation may be inadequate for the proper management of the child. Thus, parents should be adequately informed and in a frame of mind to give consent.

A high level of parental anxiety during communication with physicians may affect both their ability to communicate their concerns and ask questions and their understanding of the physicians' explanations and prescriptions. This then runs the risk of poor postsurgical management of the child. As pointed out by Montgomery et al.,³² there may be a need to engage parents identified as anxious in a different kind of information-sharing process.

Additionally, high parental preoperative anxiety is associated with high preoperative anxiety in children undergoing surgery;^{10,33–35} it would be correct to assume that a reduction in parental anxiety would lead to better outcomes for the children. Children have a tendency to evaluate and validate their experience based on the responses of the adults around them; often, these are the child's parents. This is seen in babies just learning to walk: whether a fall is worthy of tears or they should just pick themselves up and carry on with what they were engaged in has much to do with the response of the parent or the attending adult. Where the adult response is shock and concern, it triggers a cry for help; where the adult response says pick yourself up, it often leads to less of a tragic response.

For children who may be experiencing a particular event for the first time, which in this case is surgical, the cue to how to respond is to gather from the adults in that environment their anxiety or fears about the event, which is usually evident to the child, and to respond with a similar degree of anxiety. Because of this dependence on parents for guidance in coping with new or stressful situations, the focus and the need to address parental anxiety in this situation is all the more pertinent.

Peculiar Stressors in Sub-Saharan Africa

Conditions that are peculiar to sub-Saharan Africa contribute particular stressors to people living in that region. These include the cost of surgical operations, availability of surgical services, essence of children in the Nigerian cultures, and stigmatisation. These are discussed more elaborately in the following subsections.

Cost of Procedure

Cost is particularly stressful in the sub-Saharan region. This region is characterised by difficult economic and health conditions: a low per capita gross domestic product, a negative economic growth rate, low life expectancy at birth, and catastrophic maternal and infant mortality.³⁶ These factors give insight to the stress that paediatric surgery poses for parents and children. First, the cost of a surgical procedure

and its management can be prohibitive. The cost is borne solely by the parents or guardians of the child. Many of these parents are living below the poverty line; thus, having the added stress of how to fund the surgery and purchase the needed postsurgical management for the child may be an overbearing burden. Ameh et al.³⁷ have pointed out that the inability of parents to carry the financial burden has led to their removing the child from the hospital prior to completion of postsurgical management. Coupled with this is the difficulty that often arises when trying to access blood products or antibiotics that are needed for the child. These are all implicated in the development of postsurgical complications. Having health insurance would help to reduce this cost, but not many of these countries offer insurance, and for others, such as Nigeria, it is still in its infancy and not accessible for most children presenting for surgical diagnoses.

Accessibility of Surgical Services

There are only a few qualified paediatric surgeons in sub-Saharan Africa, and for most part these surgeons work in tertiary health care institutions located in urban town centres. Many of these facilities are not adequately funded and many are outdated. The additional and almost nonexistent primary and secondary health care system is weak.³⁸ The 2003 data for Nigeria, for instance, shows the ratio of paediatric surgeons to a child as 1 surgeon for every 2.2–2.7 million children. This ratio varies greatly across the regions of the country with more of the surgeons being located in the southern, more affluent area.

This picture is reflective of most other sub-Saharan countries. By implication, many hospitals in these countries do not have a resident paediatric surgeon; in these instances, paediatric surgical cases are handled by general practitioners, who are more competent in dealing with adult patients and often with equipment that is meant for adult surgical procedures. Gaps currently exist in postoperative pain management for adults, so by implication this is even more so for pain management in children.³⁹

Parents are often aware of the shortage of personnel and associated issues and their implications for their child's successful surgical operation. Additionally, in this climate, where services are scarce, getting the desired treatment often implies relocating with the child, at least temporarily, to the towns where the hospitals are situated. This, as earlier pointed out, has cost implications that are borne by the parents. The absence of funds or inability to access these facilities leads to added stress for the parents and child.

Meaning and Essence of Children in the Sub-Saharan Cultures

In many of the sub-Saharan countries, great value is placed on having children; in the more traditional settings, the norm was to have many children. For instance, the ideal family size in a Yoruba monogamous marriage is five to eight living children. Economic factors affecting family income and ability to cater for large families, as well as conflicts leading to relocation of families, has affected the desired number of children per household. In some countries in the sub-Saharan region, smaller family size is the norm. Even though there is reduction in the number of children per household in some of these countries, Woldemicael⁴⁰ has pointed out that children are still greatly valued. The value assigned to children also has a bearing on the economic benefits that they bring to the family. They are seen as additional sources of income, and increase the likelihood that one would be successful, thus bringing honour to the family. The pressure to have a child in these countries is thus enormous, and the health and status of the child takes on different meanings and makes any illness or need for surgery of particular concern for the parents or guardians.

This bias becomes even more pertinent, depending on the gender of the child. Across the sub-Saharan region, there is a preference for a male child; a male child is considered a major asset to the parents for both social and economic reasons.^{41–43} Hake⁴⁴ has pointed out that this

gender preference is based on the roles of sons in farming, trading, giving support in old age, and providing proper burial rites. In some instances, this desire for a male child has led to marital breakdown and divorce or marriage to a second wife, so in an attempt to have a male child, a woman ends up having ten or more children, which increases the chance of having malformed babies.⁴⁵

In this climate, the male child's health takes on additional psychological meaning for the parents, and his welfare plays a very prominent role in the family's functioning. The high expectations that arise from this lead to increased preoperative anxiety for the parents and, depending on the age of the child, may bring additional emotional guilt in considering what the parents may be going through as a result of his condition. This may be both in terms of financial sacrifices that the parents are making for this procedure and the possible ridicule and discrimination that the family on the whole may be experiencing.

Discrimination and Stigmatisation

In situations where the expectations are high, so also is the pressure to have children and the possible discrimination that can arise as a result of this. A woman with children is accorded respect; a woman who does not have children is at a higher risk of being disrespected or excluded at certain social forums. She is often ridiculed and jeered by her mates for not having children and sometimes specifically for not having a male child.

There is an added complication for children born with some medical condition that may require surgery, either corrective or due to events occurring in early childhood, that may lead to the child being disfigured. In the traditional setting, any person that does not meet the norm and cannot play along with other children for medical or other reasons is teased, challenged, made fun of, ridiculed, and generally isolated or stigmatised.^{46–48} These children, by reason of their condition, are likely to be competitively denied basic needs of appropriate clothing, good feeding, sound education, and emotional support. This discrimination and stigmatisation may be generalised to the whole family, so the child's siblings are teased and spoken of in derogatory terms. This leads to fear and anxiety for both parents and children, even more so when a surgical procedure alters in some way the child's functioning or physique. There is the fear of how the child will recover and adjust to the fact of not being able to move around. Thus, having to undergo an invasive procedure in any of these conditions is met with great anxiety and anticipation.

The discrimination experience and the treatment of children with disabilities are due to ignorance, superstition, and taboos.⁴⁹ This may be the result of cultural beliefs that attribute the cause of the disability either to a warning curse from God, family sins, offences against the gods, witches or wizards, adultery, misfortune, ancestors, a misdeed in a previous life, an evil spirit, or the killing of certain forbidden animals.⁵⁰

In certain situations, it is not so much the illness as it is the particular invasive approach or associated issues that lead to the heightened level of stigma that is experienced. Archibong and Idika,⁴⁶ in their prospective study between 1992 and 2001 of treatment for anorectal malformations in a tertiary referral centre in South-Eastern Nigeria, found cultural beliefs implicated in the loss of 11 (20%) of their surgical cases. A common procedure for treatment of anorectal malformation is for the child to undergo an initial colostomy. This process allows for adequate weight gain, reduces possible postoperative complications, and increases the success of perineal abdominal pull-through. The authors, however, found that the practice of wearing a colostomy bag was detested by some families and that it was considered by society to be a bad omen and therefore stigmatised. They believed that the deaths of the 11 children in the course of treatment were due largely to neglect of the child by family members, fuelled by the superstitious beliefs and negative attitudes.

Also, due to the condition and how it is viewed by the parents or society, children may be brought to the hospital late or be removed

from the hospital without permission. Thus, even though the children are valued, this value seems to depend on the child being well and conforming to what is expected of a “normal” child. At a certain level, children undergoing these various procedures may come to understand the way their condition is viewed by members of the family and society at large. Where this is not viewed positively, or is associated with stigma and discrimination, children may grow up feeling guilty for bringing this upon the family. They may thus feel responsible for the ridicule and embarrassment and may even misinterpret possible misunderstandings that occur as a natural part of growth for a nuclear unit. These feelings of guilt may have long-term implications for a child’s development.

Psychological Preparation for Paediatric Surgery

Over the last four decades, a number of efforts have focused on alleviating the potential trauma experienced by parents and their children as they await or undergo an invasive surgical procedure. These efforts also aim to maximise the effect of medical treatment.⁵¹ Thus, children (and their parents) are prepared for surgery in an attempt to prevent or decrease the severity of associated distress. These preparatory interventions range from pharmacological (administration of premedication) to psychosocial approaches, the latter of which has been the focus of this chapter.

In looking at the psychological preparation of children for surgery, various authors have presented slightly different paths. For instance, Vernon et al.²² reviewed existing preparatory programmes and highlighted three main themes that were evident in these programmes: (1) giving information to the child, (2) encouraging emotional expression, and (3) establishing a relationship of trust and confidence with the hospital staff. These three themes were later expanded by Elkins and Roberts⁵² to include (4) preparing parents and (5) providing or teaching coping strategies to parents and children.

In a more recent review, Maclaren, and Kain³⁰ adopted a historical approach, suggesting that preparation programmes moved through three different phases: information orientation and design in the 1960s, aimed at facilitating emotional expression and trust between the parties; modelling and stress-point nursing procedures in the 1970s; and then in the 1980s came the teaching of children skills and the involvement of parents. They concluded that evidence supports the development of coping skills as being the most effective preoperative preparation. This is followed by modelling, play therapy, an operation room tour, with the least effective being print media.

In discussing preoperative psychological preparation, we now look briefly at the various programmes with a focus on what is involved and how they attempted to accomplish this.

Giving Information to the Child

One of the major sources of distress is the child’s lack of information or unfamiliarity with the hospital and surgical process.²² It would then be natural to expect that simply providing the child with accurate information in a format that the child could understand would go a long way in addressing this. Providing information is not that simple, however, and does not relate in a direct way to the reduction in the levels of experienced distress. One possible explanation for this may be the fact that coping strategy affects the way we respond to the timing of information provided. As discussed earlier in the context of adult coping responses, people tend to predominantly respond in two ways; problem-focused or emotion-focused. This is also applicable to children. For instance, if a child’s predominant response is emotion-focused, which tends towards avoidance, the presentation of information prior to the procedure may cause more distress than otherwise. In this instance, it may be better to help the child with refocusing (distraction) techniques. If the child copes by using predominantly information-seeking approaches, however, then the provision of medical information in regard to the procedure will help alleviate the anxiety experienced by the child.

The second issue to take into consideration is the timing of providing information. Intuitively, it would appear that the earlier the children and parents are given information and taken through the preparatory process, the better the outcome. This is not necessarily so. A review of the evidence shows that for invasive procedures, the timing for giving information to the child depends on the child’s age. For children younger than 6 years of age, it is optimal to start 1–5 days prior to the procedure, but for children who are older than 6 years of age, the best results are obtained when they are informed a week before the surgery. Information given prior to this time leads to heightened anxiety levels for school-age children.^{53,54} It would appear that in situations in which there is a limited time for preparing the child of school age, a more beneficial approach may be to use distraction and refocusing techniques.

Using developmentally appropriate language not only allows the child to gain a sense of mastery but also facilitates the child’s greater understanding of the procedure, correcting any misinformation that may have existed. In many instances, this would involve working with parents on how to best communicate with their child regarding the upcoming procedure.

Given that the parents’ high levels of distress can be transmitted to the child, which increases the likelihood of multiple negative surgical outcomes,⁵⁵ it is important that addressing parents’ distress be made a primary focus in its own right.^{10,56} There is therefore a need to target parents for specific anxiety reduction interventions. Parents should be offered support with more access to the physician to communicate their fears and clarify their own understanding of the situation. Many parents may have an external perception of control of their child’s health—which is peculiar to sub-Saharan Africa. These parents should be assigned a small task, such as monitoring the child’s temperature, from the beginning of the child’s hospitalisation.⁵⁷ This serves to link the parents’ perception of internal control and the child’s health condition.

In giving information to parents, the paediatrician must also recognise the predominant coping strategy adopted by the parents, which affects their response to the given information. In a clinical context, for instance, it is easy to identify parents who use a predominantly information-focused approach because they will manifest a high degree of information-seeking behaviour. These parents can then be provided with detailed procedural information. Providing them with accurate information would help reduce the level of anxiety experienced and make them more prepared to offer the needed support to the child. In contrast, parents who predominantly use an emotion-focused approach could be given basic information and helped in refocusing while they support their child.

Using a Variety of Channels in the Provision of Information

There are different channels through which information is provided to children and their parents. Information could be written with enhanced visual images for a target audience of either the child or parents. This is a facility used by many hospitals, which provide leaflets or send information out to parents and children prior to their surgical procedure. Written information alone, however, has not proven to be very effective in preparing the child or parent for surgery.

Other channels for passing information to parents and children include using multimedia facilities such as videos of hospital procedures and hospitals in general, giving tours of the hospital, discussion with the paediatrician or health care professional, and engaging the children in play sessions or puppet through which the child displays emotions and feelings that may expose fears and thus allow them to be addressed. McEwen et al.⁵⁸ exposed parents to an 8-minute informative video in addition to normal preoperative preparations. They found that those parents who were exposed to the video film showed both a reduction in the desire for information as well as a greater reduction in postoperative anxiety.

Offering Play Therapy

Some hospitals provide a designated area with toys for children to play with and personnel to oversee this process. Usually, the aim of this is threefold: First, it provides an avenue for a child's emotional expression, thus revealing fears and conceptions that the child may have that could then be corrected. Second, it provides information in a format that would be easy for the child to understand. Last, it creates an avenue to help build the confidence of the child and establish a trusting relationship between the child and hospital personnel. In preparing the child for surgery, surgery- or hospital-related props are used. Hence play may involve the use of miniature versions of hospital equipment, such as syringes, masks, surgical implements, toy stethoscopes, dolls, intravenous lines, and the like. Play therapy often involves the use of a specialist, and it offers the chance to evaluate the current level of the child's knowledge, misconceptions, and coping level.⁵

Providing Psychological Interventions

Psychological intervention involves teaching the child and parents actual techniques that help them to anticipate, recognise, and manage stress-related surgical experiences. The child is taught actual life-coping skills in these sessions. Some of the interventions that have been used include a progressive muscle relaxation technique, positive self-instruction, guided imagery, conscious breathing exercises, and refocusing. For the most part, these skills are taught by mental health professionals in sessions that last an average of 15–45 minutes, depending on the capabilities of the individual or the attention span if it is a child. Often there is a need for the child or parent to actively rehearse this procedure after the sessions for maximal mastery and to get the desired effect.

Providing Models and Counselling for Children and Their Parents

The modelling and counselling approach is theoretically grounded in the social learning approach, which points to the ability to learn from observing others engaging in a particular behaviour. In this light, children awaiting a surgical procedure are exposed to models that have undergone similar procedures and responded positively to it. To be effective in getting the children to identify and desire to behave in a similar manner, the models are usually people the children can easily identify with by reason of age, gender, race, and other similar characteristics. The children may be exposed to the models through write-ups, videos, photographs, or film. This is more effective for children who have no previous medical experience.^{9,59}

Closely related to this is having the children or parents interact either formally or informally with people who are in the same or similar circumstances or who have previously undergone the experience that they are awaiting. This could be in the form of group therapy or sessions, where people come together and are exposed to others facing similar situations to help them not feel alone. A wider application of this is in more developed societies is getting people involved in online or Internet forums to discuss and ask other people who may have had certain experiences what their advice would be. Although interactions of this nature have not been tested in all settings and for all conditions, evidence^{60,61} shows that people do welcome online interactions of this nature and find them extremely useful.

Conclusion

It is important to point out that hospitals differ in regard to recommended practices in preparing a child for an invasive procedure. Some have formal policies on some of these procedures, whereas others rely more on the clinical judgement of the attending health care professional and what is feasible within that setup. For instance, the United States and United Kingdom vary vastly on the issue of parental presence (or absence) during anaesthetic induction. Kain et al.⁵⁰ found that 85% of anaesthetists in the UK allowed parents to be present during anaesthetic induction in 75% of the cases, but a much lower percentage

was obtained for the USA, where only 58% of the respondents allowed parents to be present in less than 5% of the cases. This could be a result of inconclusive evidence concerning the advantages (alleviating child's anxiety and gaining cooperation)⁶² or disadvantages (making the anaesthetist nervous or causing child to be stressed from the parents' own response).⁶³ It could also be that the difference reflects the fear of litigation or other possible legal proceedings that may exist.⁵³

In their review of preoperative preparation programmes for children, Watson and Visram⁶⁴ concluded that these programmes are not universally helpful in reducing anxiety or postoperative behaviour problems. What we do know is that some programmes have better outcomes than others and that they need to be tailored to the individual child, taking into account the child's age, previous hospital experiences, and temperament.

A gap still exists, however, in transferring the results obtained in clinical research trials to routine clinical settings. Many of these preparation programmes have been evaluated in the controlled environments of clinical research trials, where factors are manipulated to allow for clearer understanding; in routine clinical settings, these factors may not necessarily be the same, thus leading to potentially different results.¹⁵ Bridging this gap is a necessity.

Generally speaking, however, in the developed countries such as the United States and in Europe, there is a continuous search for ways of incorporating these evidence-based findings into routine clinical settings to improve the lot of both children and parents awaiting invasive surgical procedures. For paediatric surgeons in the sub-Saharan region, in contrast, the greater challenge and focus are on providing basic health and counselling services for this group.

In the sub-Saharan region, the compounding factor is the acute shortage of paediatric surgeons and other supporting health care professionals. In the more developed settings, where the ratio of children to paediatric surgeons is much lower, the inability to adequately prepare a child and parents for invasive procedures is due largely to a lack of time. The high volume of ambulatory patients seen in surgical units and the policy at some institutions to forgo a separate preoperative visit, as is typical for inpatient surgical procedures, is common. Clinicians who work with families in the ambulatory setting have an increased burden of identifying family needs and providing interventions to parents and children in a very brief time period. As expected, the situation in sub-Saharan Africa can be considered a lot worse because the child-to-surgeon ratio is so much larger.

In addition to these challenges are specific considerations when implementing preparatory programmes in sub-Saharan Africa. Notably, evidence on the effectiveness of these programmes is from the industrialised world and may not necessarily be applicable in sub-Saharan practice. Several questions arise that would be worth considering: Do children in sub-Saharan Africa respond to information in the same way as do children in the more developed societies, or are they more dependent on their parents and guardians in determining how they respond to new situations? Are the hospitals equipped to offer the preoperative preparatory sessions that are required, and do they have mental health workers or other professionals that can facilitate these sessions, or will preoperative preparation be a part of the paediatricians already overcrowded role? Are there plans in place to confront fundamental societal beliefs and values that may, as in the earlier described case, affect the acceptance of certain procedures that have been found effective for managing or treating certain conditions? A great need exists for research with a focus on finding brief cost-effective preoperative programmes that are relevant for surgical practice in the sub-Saharan region. Raising the bar to a point where every child has access to a well-thought-out preoperative programme will continue to be a challenge, but nevertheless one that African nations should strive to overcome.

Evidence-Based Research

Table 14.1 presents evidence-based research on the effect on anxiety of using preoperative preparation for parents of elective surgery patients.

Table 14.1: Evidence-based research.

Title	The effect of videotaped preoperative information on parental anxiety during anesthesia induction for elective paediatric procedures
Authors	McEwen A, Moorthy C, Quantock C, Rose H, Kavanagh R
Institution	The Royal Alexandra Hospital for Sick Children, Dyke Road, Brighton, UK
Reference	Pediatr Anesth 2007; 17:534–539
Problem	Cost effectiveness of routine antenatal screening.
Intervention	Preoperative preparation for parents.
Comparison/control (quality of evidence)	Parents were randomly assigned to either the experimental group, which was exposed to an 8-minute preoperative preparation video in addition to normal preoperative procedures; or the control group, which received only the normal preoperative preparation.
Outcome/effect	Statistically significant differences were found between parents who were exposed to normal preparation and those who, in addition to this, watched an 8-minute video. Parents who watched the video in comparison to controls showed significantly greater reductions in their desire for information as well as their levels of anxiety (as measured by the Preoperative Anxiety and Information Scale).
Historical significance/comments	This study shows an innovative cost-effective approach to addressing parental anxiety in regard to children who are awaiting surgery. A well-presented 8-minute video had the additional effect of providing answers to questions that parents may have had, and a reduction in the desire for information was also evident in this group.

Key Summary Points

1. Many children and their parents experience high levels of distress when awaiting an invasive paediatric surgical procedure.
2. Anxiety is the most commonly reported stress-related emotion that is experienced.
3. Preoperative anxiety is associated with a number of negative postsurgical outcomes.
4. Many of Africa's less resourced countries have peculiar challenges that heighten the level of the anxiety experience.
5. Reducing the level of distress is paramount in facilitating postsurgical recovery for the child.
6. Various preparatory programmes exist, but they are not universally helpful. Programmes need to take into consideration the child's age, sex, previous hospital experience, and temperament, as well as factors that are related to parental status, well-being, and anxiety level.
7. Many programmes that have proven effective in a clinical research setting must be effectively transferred to routine clinical settings.
8. With the peculiarities of the African continent, it is crucial for further research to be done in the area of presurgical stress and anxiety.
9. We must raise the bar to every African child having access to a well-thought-out preoperative programme.

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