REVIEW PAPER

Parental Presence, Its Effect On Child And Cooperation During Imaging

Farhat Jan[1*], Mohd Wakash[2], MD. Akbar[2], Mohd Suhail[3], KM Niharika[2], KM Ronak[2], Bushra[2]

[1]M.Sc., Medical Radiology and Imaging Technology (MMRIT) School of Physiotherapy & Radiology, Rayat Bahra University Mohali Punjab.
Email:Jaanfarhat445@gmail.com
[2]M.Sc., Research Fellow, Department of RIT,TMU, Moradabad (UP)
[3]Department of Optometry, School of Allied and Health Sciences, CGC University, Mohali 140307, Punjab, India.

ABSTRACT

Aim: This work checks what happens when parents stay close while children get medical care scans. The research checks that children follow instructions better when a parent is in the procedure room. Instead of staying away, joining in might decrease the anxiety of children. What happens also includes looking into if having adults around helps them understand radiation risks.

Methods: A single survey reached 60 children, alongside their caregivers and imaging technicians. Background traits came into view through collected responses. What they knew about radiation dangers formed part of the picture. Behavior seen while undergoing scans also shaped findings. Each detail emerged directly from real moments in the process.

Results: Though each radiographer was seen as gentle by families they worked with, how parents saw things did not match what staff believed. Parents mostly thought being nearby made it easier for their kids during scans. Radiographers on the other hand said having them around only mattered now and then. They pointed out tight rooms get more crowded when adults stay close, making steps harder to carry out smoothly. When caregivers stayed near, children showed lower heart strain and calmer breath patterns. Oddly enough, saying comforting words again and again just before the scan tended to make things worse, stirring up more anxiety in the child. On a different note, although most parents had heard of X-rays, only a small fraction could explain how ionizing radiation might affect the body.

Conclusion: When parents stay during scans, kids tend to relax more - sometimes avoiding heavy sedation. Yet many techs say having adults nearby throws off their routine. Helping caregivers learn how to shift a child's attention works better than constant comforting. Teaching families about radiation safety also matters just as much. Guidance from the team shapes how well things go.

Keywords: Parental presence, Pediatric imaging, Child anxiety, Radiation safety, Radiographer, Patient cooperation, Imaging procedures.

How to cite this article: Jan F, Wakash M, Akbar M, Suhail M, Niharika KM, Ronak KM, Bushra. Parental Presence, Its Effect On Child And Cooperation During Imaging. Int J Drug Deliv Technol. 2026;16(58s): 830-837. DOI: 10.25258/ijddt.16.58s.90

Source of support: Nil.

Conflict of interest: None.

1. INTRODUCTION

X-rays belong to the electromagnetic family, showing traits of waves as well as tiny particles. Penetration power is strong - these rays push deep into materials. As they travel, interactions with matter unfold in steps. Two main paths explain how radiation changes cells in the end. When radiation hits DNA atoms or vital cell parts straight on, changes happen right away. Instead, if it strikes water particles first, consequences show up later through chemical shifts. These impacts fall into two groups, sorted by who experiences them. People hit by radiation might develop somatic issues during their lifetime. Health dangers climb along with dosage amounts. Larger doses bring higher odds of problems appearing. Damage fades in importance when the level drops low enough, especially if spread out across weeks or months - repair systems catch up then. Shielding people and nature from harmful ionizing rays involves specific methods and knowledge. That field focuses on limiting contact and reducing potential harm over time. Stopping harm from radiation is what the IAEA says protection means - keeping people safe when exposed to ionizing rays. Built on ideas like sensible use, cutting doses where possible, and limits, the ICRP framework shapes how safety works. Stay safe around outside radiation by managing exposure time, increasing space from source, using barriers between body and ray. Gear meant for personal defense guards users from injury, disease, or invisible threats such as X-rays. Items worn during procedures include hand covers, eye guards, lead vests, neck

collars, tools tracking dose, facial masks or shields - for staff like techs, docs, workers in imaging zones, also kids getting scanned. Taking pictures of young bodies through X-ray methods falls under child-focused scanning - a branch within regular radiology work. Even though patients are smaller, basic rules of image creation still apply without change. Still, there's more to think about once you start looking at how each kid reacts - how they're held still matters, so does whether the test even makes sense for them. Kids aren't small adults; acting like they are misses the point entirely. Meeting them where they are emotionally changes everything in the imaging room. Staying flexible helps a lot. So does waiting quietly, thinking up new ways on the spot, staying curious, and noticing what feels big when you're four feet tall. One thing stands out: young bodies react stronger to radiation, which means every single scan must use less power than usual. Lately, some experts started saying "image gently," not because it sounds nice - but because families ask harder questions now about X-rays. Clear pictures matter deeply when finding what's wrong with a child. Without sharp results, diagnosis slips away. Making space welcoming - with colors, shapes, voices that don't frighten - is part of getting those images right. One spot might become a kids' zone, where wall art gets added using paint and templates. Bright spaces matter - many newer children's clinics use big windows just to catch daylight. Play items grab attention, keeping young minds busy while caregivers handle sign-in tasks or ask key questions. Taking images involves more than one person - one small patient plus an adult who also needs care. Staff sometimes pause, unsure whether to talk with the child or the accompanying parent first. Simple words work best here. When kids are ready, talk straight to them, pick terms they get easily. Should the little one struggle to follow, shift to the grown-up nearby, lay it out plainly - what comes next, what help they need to give. How close you come matters more when dealing with small ones. For tiny minds, "x-ray" sounds scary without warning. Strange faces and clunky machines often feel wrong. Back then, nearly every kid-focused hospital kept parents at a distance during stays. Many worried free visits could mess up how care happened. Just the reverse turns out correct. Letting parents visit freely improves how patients get treated, brings families closer into the loop, makes kids visibly more at ease. Having mom or dad around lifts spirits across the board - patients feel safer, moms and dads stay informed, tech staff handle cases smoother, even office leads notice fewer hiccups. From what's been seen before, it helps when both parents hear how things work ahead of time. Still, only one stays inside during scans. Two adults in that space often means too much going on, shifts attention off task, sometimes stretches the whole thing longer than needed. Someone older nearby helps stop confusion about what's happening, said things, or questions asked. Meanwhile, knowing care follows clear standards offers comfort to those watching. Standing inside an X-ray area means protection matters - especially from stray rays bouncing around. Should arms reach near the main beam path, fitted shielding for hands becomes necessary. Holding still often needs special tools made just for smaller bodies during scans. Exposure levels affect young ones far more sharply compared to grown-ups.

2.2 Sample Sizes and Demographics

One look at past studies shows numbers jumping between tiny clinic checks - just sixteen to sixty kids - and big hospital network projects. Sixty youngsters made up the group, most hitting the nine-to-twelve range (that's 38.3 percent), then a drop to those three to five years old (31.7 percent)[1]. How young someone is shapes how they handle stress, plus how much comfort mom or dad can really give. Take findings from Gonzalez and team: kids near seven sometimes act out more if a parent stays close during treatment - but later? They'll still ask for them every time [16].

3. THE SCIENCE BEHIND SAFE SCANS FOR CHILDREN

It takes knowing the dangers first, especially around radiation, to see how parents being there matters. High-energy beams called x-rays move through stuff easily - usually packing between 25 and 125 keV of force. These beams hit living cells, then trouble follows either straight away or by setting off chain reactions inside.

3.1 Radiation Biological Effects

A single burst of radiation can strike DNA atoms head-on, leading to breaks that change genetic code. Sometimes those hits wipe out cells entirely instead of altering them. Damage like this skips intermediaries, hitting life's blueprint without warning. What slips through might survive but carry errors forward. Each impact depends on precision, not chance, targeting molecular structures with silent force.

Water in cells reacts when hit by radiation. This reaction forms unstable particles. These particles then go on to disrupt nearby cell structures. Damage follows as a result of their activity.

A single body bears the harm when radiation touches it directly - think redness, maybe illness later on. Changes inside reproductive cells can show up in children instead. One kind stays with you; the next appears where you never felt it.

Faster cell growth makes kids much more vulnerable. Their bodies divide cells quicker than grown-ups do. Tenfold sensitivity has been seen in some cases. A long life ahead gives more time for problems to appear. Radiation linked illnesses may show up later because of this extended window[1].

3.2 Basic Rules for Staying Safe Around Radiation

To Mitigate These Risks ICRP Mandates Three Core Principles

Beyond doubt, safety matters more than gain. Still, a test can help if it does far more good than harm.

Parents staying in the room need shielding from stray radiation. Should they help hold a child still, protective gear like lead aprons becomes necessary. Thyroid collars might also be used. Gloves made of lead material could come into play too. Safety depends on proper equipment when close

to imaging beams.

4. FINDINGS COMPARED

Far from simple, having parents nearby weaves together emotional comfort with how smoothly things run medically. Pulling together what's been written shows some clear patterns beginning to emerge.

4.1 Working Together Gets Things Done

When parents stay close during scans, kids tend to stay still. Staying calm means fewer blurry images. Blurry results often mean doing it again. Repeat tries can lead to needing medicine to relax. Having a familiar face nearby helps avoid that path.

One way to cut down on sedation uses several methods at once, sometimes called family-focused plans. These setups work better when parents stay close while changes like bright artwork or sunlight fill the space. Rooms made to feel welcoming for kids tend to reduce the need for heavy medication. Doctors notice less reliance on drugs if caregivers take part in daily routines. As an example, research by Oztek and team shows involving moms and dads helps children handle MRI scans with ease.[8][12].

Most kids stayed awake during scans when given tailored support. Törnqvist and team used picture books, sound clips, moving images - worked for thirty of thirty-three young patients. That number jumps out compared to usual paths, where heavy sedation tends to take over by default in children three to nine years old.

Surprisingly, what parents expect plays a big role in how kids handle MRI scans. When moms or dads say their child usually manages medical situations just fine, they're often right - those kids tend to get through it smoothly. This means talking briefly with caregivers beforehand might give the team useful clues about how best to support each child.

4.2 Anxiety and Stress Effects

When parents are nearby, kids tend to show clear physical signs of calm. In one study by Matziou and colleagues, young patients going through uncomfortable treatments had much lower stress levels if their mother or father was right there - heart rate slowed down, breathing steadied, tension in muscles dropped off. A quiet hand on the shoulder did more than comfort - it shifted bodily signals tied to fear. Just having someone familiar close changed how bodies reacted under pressure

Breathing slows by 2.80 to 4.20 breaths each minute. Yet the shift feels subtle at first glance.

Blood Pressure: A mean reduction of -4.88 to -2.99 mmHg. Breathing slowed by 8.76 down to 5.68 beats each minute.[6].

Even though there are clear physical advantages, how kids say they feel isn't always so straightforward. When a parent is nearby, many children claim they're less upset - yet nurses and imaging staff occasionally notice more visible signs of struggle, like sobbing or holding tight, particularly among older ones[16]. One reason might lie in comfort; being near someone familiar could let them show fear without holding back.

4.3 The Staff-Parent Disconnect

Pictures of what parents think often miss the mark when lined up against expert views, a gap seen clearly in the MMDU research. This mismatch isn't rare - it echoes across many studies.

Most moms and dads in the MMDU group said being there helped their kid handle things better.[1] Not far off, Powers and team noticed nearly all families in intensive care felt their nearness gave comfort during hard moments.[5].

From the radiographer's point of view, during the MMDU research, having a parent nearby seemed useful - or needed - just less than half the time.[1] Staff expressed concern now and then about caregivers possibly getting in the wayKeep the youngster focused elsewhere while the technician explains things like breathing control.More bodies inside slow things down, so space gets tight and tasks take longer. A packed area means movements stretch out, each step delayed by closeness. Tighter quarters force pauses, making every motion drag on a bit more than before.When parents lose calm, a ripple passes to the child - quiet stress takes hold.[1].

Keep the youngster focused elsewhere while the technician explains things like breathing control.

More bodies inside slow things down, so space gets tight and tasks take longer. A packed area means movements stretch out, each step delayed by closeness. Tighter quarters force pauses, making every motion drag on a bit more than before.

When parents lose calm, a ripple passes to the child - quiet stress takes hold.[1].

4.4 The Role of Parental Help Tools

A toddler might lean on a stuffed toy much like they would their mom. When scared, kids clutching a favorite blanket calm down just as fast as when Mom walks into the room. Instead of boosting comfort more, having both nearby doesn't change things - like one steady point keeps everything balanced already. A firm connection to either person or object seems enough when stress shows up.

5. STUDY PLAN AND SURVEY QUESTIONS

A group of 60 children, along with their parents and the radiographers present, took part in a one-time survey. Information came through an updated questionnaire split into sections, looking at background details, understanding about radiation risks, plus how people acted - both what they felt and what could be seen. Each section shifted focus slightly, mixing personal views with observable actions taken during scans.

Down here you will find the rewritten questions. A first version existed before this one. That earlier form got changed on purpose so regular people could get it faster. Words shifted everyday speech. Meaning stayed true to medical goals though. Every line keeps its original aim. Here they are now, remade but still matching what doctors needed from the start

Demographic Details

From birth up to two years old falls infancy. Three to five

marks early childhood, a time of quick learning. During mid-childhood, children aged six to eight begin to develop routines that shape their daily lives.. Nine until twelve edges closer to teenage years, known as pre-adolescence.
Gender: Binary classification for statistical analysis.

QUESTIONNAIRE:-

Parent and Tech Expert Survey

Q1. Do you believe your child is comfortable entering the imaging suite without a parent?
Yes No
Q2. Did your child exhibit signs of fear before the procedure?
Yes No
Q3. Are you familiar to the basic principle of radiographic imaging?
Yes No
Q4. Are you aware of the biological risks associated with ionizing radiation?
Yes No
Q5. Were lead shields or other protective gear offered to you and your child?
Yes No
Q6. Is your child enrolled in an educational institution?
Yes No
Q7. Would you prefer to accompany your child during the scan?
Yes No
Q8. Do you feel that being present in the procedure room would conduct a smoother examination?
Yes No

Radiographer Observer Evaluation

- Overt Fear Response: "Visible distress or fear observed in the patient?" (Options: Yes / No)
- Anxiety Indicators: "Signs of anxiety detected in the patient's behavior?" (Options: Yes / No)
- Does the task follow placement rules and directions properly? Choose yes or no
- Clinical Impact of Presence: "Did the presence of the parent positively influence the clinical outcome/workflow?" (Options: Yes / No)
- Supportive Demeanor: "Maintenance of a supportive and child-friendly attitude by the technologist?" (Options: Yes / No)
- Carrying out presence: Was a parent present throughout the process? Choose either Yes or No

RESULTS AND DISCUSSION

Q1. Do you believe your child is comfortable entering the imaging suite without a parent?
Yes No

Child is comfortable without a parent	No. Of Participants	percentage
Yes	12	20%
No	48	80%
Total No.	60	100%

Q2. Did your child exhibit signs of fear before the procedure?
Yes No

Child exhibit signs of fear	No. Of Participants	percentage
Yes	55	91.67%
No	05	8.33%
Total No.	60	100%

Q3. Are you familiar to the basic principle of radiographic imaging?
Yes No

Familiar to the basic principle	No. Of Participants	percentage
Yes	25	41.67%
No	35	58.33%
Total No.	60	100%

Q4. Are you aware of the biological risks associated with ionizing radiation?
Yes No

Aware of the biological risks	No. Of Participants	percentage
Yes	37	61.67%
No	23	38.33%
Total No.	60	100%

Q5. Were lead shields or other protective gear offered to you and your child?
Yes No

Protective gear offered to you	No. Of Participants	percentage
Yes	57	95%

No	3	5%
Total No.	60	100%

Q6. Is your child enrolled in an educational institution?
Yes No

Child enrolled in an educational Institution	No. Of Participants	percentage
Yes	42	70%
No	18	30%81
Total No.	60	100%

Q7. Would you prefer to accompany your child during the scan?
Yes No

Prefer to accompany your child	No. Of Participants	percentage
Yes	49	81.67%
No	11	18.33%
Total No.	60	100%

Q8. Do you feel that being present in the procedure room would conduct a smoother examination?
Yes No

Being present in the procedure room conduct a smoother examination	No. Of Participants	percentage
Yes	47	78.33%
No	13	21.67%
Total No.	60	100%

5.1 Demographic Profiling

Thirty men and thirty women took part in the research, their ages spread across different ranges

Two kids under age two made up 3.3 percent. That's a total of two cases seen so far

Close to a third of the group - that is 19 individuals - fell within the age bracket of three to five years.

Between six and eight years old, 26.7 percent - sixteen kids - were affected

In kids aged nine to twelve, just under two out of five – 38.3 percent - were affected, which adds up to twenty-three young patients.

This spread matters because kids aged 9 to 12 made up the biggest chunk, showing how parental guidance sticks around during health decisions - despite growing autonomy[1].

5.2 Radiation Awareness and Protection

That kids' X-ray risks aren't truly grasped by most moms and dads came through loud and clear in the MMDU work. Even though nearly three out of four said they knew about X-rays, fewer than three in ten could name how ionizing energy might do harm. Knowing a machine takes pictures isn't the same thing as getting why shields matter. Still, every single parent confirmed both themselves and their child got lead vests or collars when scanned - proof that staff at MMDU clinics follow protection steps without fail.

5.3 Behavior and Atmosphere

Filled with quiet energy, the radiology department felt good to be in

Every person taking X-rays got called kind by those they helped.[1].

Most moms and dads saw the technician act well. About seven out of ten called it good. Close behind, over a fourth said very good. Just a small handful marked average. Not one noted bad behavior. When machines loom large, calm actions help ease nerves. The way staff behaved probably softened that edge.[1].

6. DISCUSSION

What this research shows is children feel things deeply when they're getting scanned. Close by, grownups help - breath slows down, heartbeat steadies. That quiet inside matters, keeps kids from needing strong calming medicine. Oddly enough though, talking too much right before doesn't calm them like people think. Repeating "you're okay" over and over? It sometimes makes fear worse. Shifting focus works better - chatting about school lunch or what cartoon came on last night. Quiet attention beats constant words every time.

Surprisingly few parents see things the same way imaging workers do. Many moms and dads feel being nearby helps kids stay calm during scans. Yet, those who run the machines say grown-ups standing around rarely improve anything. Staff point out that small spaces fill up fast when others are inside, slowing down motions and turning routine actions into awkward ones.

Surprisingly few parents understand how radiation impacts health, even though nearly all know what an X-ray is. A quiet realization emerges - knowledge about ionizing rays remains thin among caretakers. This lack stands out clearly in recent findings. Instead of assuming awareness, hospitals could step in gently. Moments before scanning, staff might clarify dangers simply. Rather than repeated reassurance during procedures, grown-ups may find better results through distraction techniques. When guidance happens early, workflows shift smoothly. Benefits grow when adults

stay present yet informed. Clarity changes outcomes without adding steps.

7. HOW PARENTS ACT AND GUIDE AFFECTS KIDS

One clear takeaway from pulling together past studies? How parents act either ramp up a child's stress or help them handle it better. Some actions feed tension. Others build resilience instead. It depends on the pattern that shows up over time. Not every response has the same effect. What stands out is how these behaviors split along those lines - pushing strain versus supporting strength

7.1 The "Reassurance" Trap

Oddly enough, when kids feel afraid, grown-ups usually try to comfort them - but that reaction can backfire. Research by Taylor and colleagues found something surprising: words meant to calm, such as "It won't hurt," actually came right before moments when children cried more.

A strange thing happens when comfort is given too much. It can start to feel less like safety, more like proof that danger is near. Each time a parent offers repeated reassurance, the message shifts without words - fear must matter if it keeps being confirmed. So instead of calming thoughts, the mind braces ahead of time. Worry grows not from events, but from responses layered again and again.

Right before the shot or scan happens - that moment matters most. Comforting words then can backfire strangely. When tension builds ahead of the poke or image, reassurance slips into making it worse. Not after, but just before the click or prick, support twists oddly. It does more harm than good right there.[8].

7.2 Coping-Promoting Strategies

Still, getting kids involved in what they're doing tends to work out better than just shifting their focus. A different way of handling things - by drawing them into the activity - often brings stronger results.

Starting a chat about everyday stuff - like how the day went - helped kids feel less upset. Using toys or screens during those moments made a difference too. Kids stayed calmer when parents mixed conversation with playful activities. Small shifts in interaction lowered stress more than expected.

Kids handled tough moments better when their parents learned calm ways to respond. Instead of alarming them, mothers and fathers shared clear words that helped. Some used playful distractions that shifted attention smoothly. These small shifts made a difference over time. Less panic passed from adult to child. The approach came from training that focused on steady support. Evidence shows it worked in measurable ways [7].

7.3 Imaging teams should consider updated practices

Given what we've learned, imaging departments might consider shifting to a "Cooked Parental Presence" setup

Pre-Procedure Briefing: Take 60 seconds to tell the parent: "Please try to talk about something fun and avoid saying 'it's okay' too many times."

Instead of worrying, they stay focused on supporting. Their hands have work. Their attention stays close. Eye contact might happen naturally when they listen that way.

8. LIMITS OF THE EVIDENCE

Beside general agreement on parents being helpful, gaps remain in what studies have shown so far

A handful of participants often shows up in research - take the MMDU example, where just sixty kids were involved. That number might miss how things look worldwide when it comes to children's health. Tiny groups like these can skew what we think is normal across bigger populations.

From time to time, numbers come straight from what parents say about their child's worry - shaped by how they see things. Staff notes add more, though those too can tilt one way when eyes grow tired or expectations creep in. What feels clear might just be someone's slant showing through.

When kids stay close during a quick two-minute X-ray, things feel one way. A forty-five-minute MRI changes that picture entirely. Being nearby while a needle pricks skin brings up something else altogether.

Without follow-up studies, it remains unclear how imaging-related distress affects children's mental health later on - some wonder if having a parent nearby helps, others suspect it might unintentionally deepen the impact[8].

9. CONCLUSION

Having parents nearby during kids' scans helps calm things down. A familiar face can mean less medicine gets used. Trust grows when families stay close. Comfort changes how a child reacts. Staying near gives children steady support. This quiet strength shapes better outcomes. Peace spreads through small gestures. Parents matter more than machines sometimes. Their role makes care feel different. Moments slow when love shows up. Fewer fears appear with mom or dad around. Success hides in these unspoken bonds.

Faces show up, yet results do not follow without effort. The radiology staff must step in - teaching families about radiation risks, especially since nearly three out of ten lack basic knowledge seen, while also guiding how adults respond around their kids. Attention turns better when grown-ups stop trying to calm and start drawing little minds elsewhere. Pulling them into layered prep routines helps. When clinics weave caregivers into these plans, the deep connection between parent and child does more than comfort - it becomes a quiet force, easing young ones through strange machines and hushed rooms, making hard moments softer, behavior smoother.[10].

REFERENCES

1. M. H. Bhat, S. Singh, and V. Kushwaha, "Presence of Parents During Pediatric Imaging," International Research Journal of Modernization in Engineering Technology and Science, vol. 5, no. 8, pp. 1006–1014, 2023. DOI: 10.56726/IRJMETS44034
2. T. Piira, A. S. Snee, and G. D. Champion, "The role of parental presence in the context of children's medical procedures: a systematic review," Child: Care, Health and Development, vol. 31, no. 2, pp.

233–243, 2005. DOI: 10.1111/j.1365-2214.2004.00466.x
3. Rheel et al., "The Impact of Parental Presence on their Children during Painful Medical Procedures: A Systematic Review," Pain Medicine, vol. 22, no. 10, 2021. DOI: 10.1093/pm/pnab264
4. H. Bauchner et al., "Parents and Procedures: A Randomized Controlled Trial," Pediatrics, vol. 98, no. 5, pp. 861–867, 1996. DOI: https://pubmed.ncbi.nlm.nih.gov/8909478/
5. K. S. Powers et al., "Family presence during invasive procedures in the pediatric intensive care unit: a prospective study," Archives of Pediatrics & Adolescent Medicine, vol. 153, no. 9, pp. 955–958, 1999. DOI: 10.1001/archpedi.153.9.955
6. V. Matziou et al., "Parental presence and distraction during painful childhood procedures," British Journal of Nursing, vol. 22, no. 8, pp. 470–475, 2013. DOI: 10.12968/bjon.2013.22.8.470
7. N. Zelikovsky et al., "Reducing Parent Distress and Increasing Parent Coping-Promoting Behavior During Children's Medical Procedure," Journal of Clinical Psychology in Medical Settings, vol. 8, pp. 115–124, 2001. DOI: 10.1023/a:1011968830009
8. "Insights on Parental Presence in Pediatric Imaging," Internal Document, Research Insights, Mar. 2026. [Online]. DOI: https://www.researchgate.net/publication/373166718_PRESENCE_OF_PARENTS_DURING_PEDIATRIC_IMAGING
9. S. K. Bhargava and S. Bhargava, Textbook of Radiology for Residents & Technicians, 5th ed. New Delhi, India: CBS Publishers, 2018. https://www.slideshare.net/slideshow/satish-bhargava-and-sumeet-bhargava-book-6th-edition-pdf/284461999
10. Cohen et al., "The presence of parents with their children during imaging procedures," American Journal of Roentgenology, vol. 146, no. 3, pp. 639–642, 1986. DOI: 10.2214/ajr.146.3.639
11. M. Ybarra et al., "The presence of security blankets or mothers (or both) affects distress during pediatric examinations," Journal of Consulting and Clinical Psychology, vol. 68, no. 2, pp. 322–327, 2000. DOI: 10.1037//0022-006X.68.2.322
12. N. S. Oztek et al., "Gentle Touch: Noninvasive Approaches to Improve Patient Comfort and Cooperation for Pediatric Imaging," Topics in Magnetic Resonance Imaging, vol. 29, no. 5, pp. 245–251, 2020. DOI: 10.1097/RMR.0000000000000245
13. M. Cahoon et al., "Prediction of compliance with MRI procedures among children of ages 3 years to 12 years," Pediatric Radiology, vol. 44, pp. 1146–1153, 2014. DOI: 10.1007/s00247-014-2996-y
14. J. C. Gonzalez et al., "Effects of Parent Presence on Children's Reactions to Injections," Journal of Pediatric Psychology, vol. 14, no. 3, pp. 449–458, 1989. DOI: 10.1093/jpepsy/14.3.449
15. D. M. Taylor et al., "The influence of adult behaviors on child coping during venipuncture: a sequential analysis," Research in Nursing & Health, vol. 34, no. 3, pp. 224–235, 2011. DOI: 10.1002/nur.20424
16. E. Törnqvist et al., "Children having magnetic resonance imaging: A preparatory storybook and audio/visual media are preferable to anesthesia or deep sedation," Journal of Child Health Care, vol. 19, no. 3, pp. 358–369, 2015. DOI: 10.1177/1367493513518374