

## Jugaad: Lessons from the Tropics to the World

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Jugaad is here to stay. The Oxford English Dictionary defines 'Jugaad' as "a flexible approach to any problem-solving that innovatively uses limited resources". In very simple terms, it stands for 'put together'. The word finds its origin from Northern India where farmers used essentially spare parts to assemble their own vehicles known as 'Jugaad'. Gen-Z talks about DIY (Do it yourself) and hacks; the millennials (Gen-Y) have lateral and out-of-the-box thinking. However, the decades-old concept of jugaad encompasses exactly that - the approach to finding solutions with improvisation and ingenuity.

A search on PubMed on Jugaad yields just about 8 results all published in the last decade. Prakash *et.al*<sup>(1)</sup> break the concept of Jugaad into 4 stages:

- Yearning for the solution of a problem
- Learning and experimentation
- Exploring available options and resources
- Designing a creative solution

To summarize, this is paraphrasing of the old adage, "Necessity is the mother of inventions".

The main concern around this quick-fix approach in healthcare is safety and legality. However, if the jugaad approach is taken, it is fairly straightforward to innovate using existing tools and work with manufacturers to develop low-cost solutions. This low-cost solution must meet the benchmark of safety and cross the hurdles of cost and access.

Every surgeon in training or practice, faces a problem that they solve with what is essentially a jugaad. These small ideas are seldom deemed worthy of sharing or publishing; but therein lies a hidden untapped cache of innovations waiting to see the light of day.

Jugaad is not a new concept in pediatric surgery. Almost every instrument, device and equipment began with utility in adult practice which is subsequently adapted for pediatric use. Pediatric surgeons a couple of decades ago had to innovate and find smaller-sized alternatives, all through what was jugaad in its essence. To cite a few examples, Ramakrishna *et.al*<sup>(2)</sup> have published their idea of innovating a 5mm trocar using the trocar of a suction-drain (Romovac™). Kulkarni *et.al*<sup>(3)</sup> have described a jugaad for jet insufflator in difficult airway intubations. These are just examples of papers with 'jugaad' in the title; there are be many more without that word. The author remembers an innovation in which a feeding tube within an endotracheal tube and wall suction was used to create an effective Replogle suction tube and many similar handy innovations not formally published. There is value in highlighting ideas such as these.

*Pediatric Surgery in Tropics* should, therefore, encourage all pediatric surgeons to write about their 'jugaad' ideas. If a particular jugaad is reproducible and resonates with readers, many

might put it into practice. Even if it is not implementable, it will at least give the readers an impetus towards problem-solving approach.

Today, even the so-called resource-abundant healthcare systems are facing difficulties, as the price of healthcare continues to skyrocket. Healthcare systems across the world are crumbling under the pressures of juggling the economic burden of providing healthcare. Therefore, cost-cutting through innovation is not something to be looked-down upon; rather it is something to be legitimized with due process towards safety. *Jugaad* is nothing new but, it is now time for the world to employ this concept to use what little is available, to accomplish a lot, or to use everything that is available with utmost efficiency.

## REFERENCES

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