00:00:04  
*R:* So thanks for helping in the interview. Yeah.

00:00:11  
*R:* So as you know, I'm studying the cleaning and sterilization of laparoscopic instruments in India. And I'm interviewing people to find out more about the methods of cleaning and sterilization and also the maintenance and repair of laproscopic instruments. Yes. So would you mind first introducing yourself?

00:00:38  
*N:* My name is Bravin from South India. I work with dr. Gnanaraj, who is a laparoscopic surgeon. And we do, laparoscopic surgery in the rural parts of India, particularly in Tamilnadu and in the Northeast states of India, I work with the dr. Gnanaraj for the last 15 years and I participated in designing a Low-Cost Gasless laparoscopy device for the rural surgeries in India. And I assist with him in surgery primarily as a scrub nurse and also I have a major role in cleaning maintenance of the surgical instruments as well. Thank you for the university for making me to be part of this project and I like to know more about that. And we like to improve our quality and standards, particularly in rural surgeryin India. And I looks forward to a good opportunity. Thank you so much.

00:01:47  
*R:* Thanks. So we've travelled to a few hospitals together and, I've observed how the, instruments are being cleaned here. And so mostly what I've seen is that they are used in surgery. After surgery they're soaked in water a lot of the times. And then their brush with soap powder. Then they're rinsed and then placed in Cidex. That's mostly the process. Do you agree that that's the most used process?

00:02:26  
*N:* I agree with that. But actually, it's but it's mostly based on the policies of that hospital. The rural set-up in India. Doesn't have standard operating procedures. General SOP to be followed. Every hospitals follow what they have available, basic availabilities. The uniform code of cleaning, which is mostly available in rural India is using the washing powder, which is easily available and affordable by them. And they found that this is mostly the best part at the moment for them till they find an affordable and safe cleaning product for their setups.

00:03:19  
*R:* And if you look at at other reasons for cleaning the instruments this way, can you think of any?

00:03:28  
*N:* At this moment apart from soap powder? You also notice that they're using bleaching powder. So it's not directly concentrated bleaching powder that they use. They actually dilute it and particularly they soak the blood and tissue contaminated instruments into that. And they use washing powder solution to clean that instruments. That's the knowlegde they have. Thank you so much. Daniel for making me understand that it causes pores [pitting] on the instruments. On such informations we need to update the order staff because that reduces the quality of the instruments. Apart from these two sources at the moment, I have seen and have used Bio Enzymatic Solutions which are also available on the market.

00:04:31  
*N:* Unfortunately it's not affordable rural centers because rural centres in India don't have a regular number of regular surgeries. Unlike the urban centres. In the urban centres they have continuous surgeries that are happening every day. But the rural centres, it's not. There are mostly unplanned cases. So they cannot just prepare a Glutaraldehyde solution and keep it open for two days or three days. They have to open a whole bottle and they have to use it, and they don't know when the next case will come. It might be the next day or the next month or the next week. So they're spending a lot of time we are to find out some other option to the solution, which they can afford and they can keep it for the next case, something like that, you know?

00:05:22  
*R:* Yes. So in a lot of the bigger hospital centers, they'll have one team of nurses helping in surgery and then after surgery they can collect the instruments and they'll be cleaned by other people. Why don't you think you had a system like that would work in the more rural hospitals that we visited?

00:05:58  
*N:* I believe, Daniel, for this team of management system mostly in urban centres being set up in developed hospitals. But in rural setups the problem is a number of staff. Although they may have enough cases, that doesn't mean that they have enough populations there, have enough number of population to have surgeries or something. It will be a general population. Many of them will be for OP someone will be for surgery, someone will be for other medical treatments in the wards. So it's a multi role model system that at the moment in rural India we follow. So it's not just a scrub nurse or not as a circulating nurse, it's all the roles will be melted together. So there are no specific cleaning staffs, particularly in rural setups. In rural setups another problem will be the education system. You know that there's no proper education to the staff for [handling] the instruments. The problems the instruments will face if you use some contrast [corrosive] items like bleach or something.

00:07:17  
*N:* That's one reason. And the staff management system, of course, they use you if we can be able to divide the work. If you can segegate the staff and say this is your particular role in doing that, it really brings that quality. But actually it has a financial impact. And also the role is something. But at this moment in rural India, it is not needed, I believe. But actually teaching the staff, particularly on handling all these things properly may help then having specific roles and stops.

00:07:53  
*R:* OK. Have you received training in cleaning or sterilisation of surgical instruments?

00:08:04  
*N:* Myself, I am a BSE by profession. I'm a registered nurse in India and I have worked with various tertiary hospitals in India, particularly private corporate hospitals. I am in a surgical ICU nurse. Earlier I worked at a liver transplant unit and I worked in Dublin.

00:08:27  
*N:* I work in a few modern cities so I know about the protocols and policies. So of course, that doesn't match with the rural nurses at the moment. So my personal knowledge for cleaning sterilisation and autoclaving instruments is, I have enough knowledge about that at the moment. But practically it's not available or affordable by at rural hospitals in India at the moment.

00:08:53  
*R:* You mean they're not affordable to have fully trained nurses?

00:09:00  
*N:* Training is not costly. Training is not a matter really. The problem is application of that training in that setup is financially involved, particularly the setup's what do you need?

00:09:14  
*N:* You know, for example, you are saying actually how to clean this instrument with the bio enzymatic solution, you have to soak it in a proper manner. There is no innovative methods at the moment to do it in a [unintelligible] manner, between surgery, because between the surgery at the moment they'll have around 30 minutes or 40 minutes of time. So during this time they have to soak the instruments in a Bio Enzymatic Solution. And you have to dry it, take it out, clean with normal water. Then you have to dry it and put it in the Cidex, from Cidex it has to be cleaned with sterile water and we had to put it onto the patient table. That's what you said? I think so.

00:10:01  
*R:* Yeah.

00:10:02  
*N:* So, uh, how we cannot do that in a rural setting. That's what's the costly at the moment, if we can be able to reach that,

we can reach the goal.

00:10:13  
*R:* Right. And, I think a lot of the nurses that I've spoken to have only been basically trained in handling of surgical instruments. But, uh, how have you received any extra training for laparoscopic instruments?

00:10:33  
*N:* There is no specific knowledge, such as for handling of laparoscopic instruments at the moment. We have given. Mostly all the hospitals, they train their staffs, but typically based on the surgeries they do, based on the patients they face, based on the handles, the instruments they use. So if you ask the particular staff talking about a new handle, or a new instrument, how to use it. They don't know. Or if you ask the particular staff about a particular professional name: "what is that" and "how to use that" not they doesn't know either. Or about the chemical combinations they don't know. They are using it because they have been told.

00:11:11  
*R:* And is there no place where they can look it up, where they can find more information about how to do it?

00:11:18  
*N:* If we provide them knowledge they will accept it. There's no people I've seen mostly that they will not accept. They accept it and they will learn it. Everywhere there is an opportunity for learning. But, you have to find out and initiate you to teach them how to bring them knowledge about the instruments and handling. And in a manner they can learn it easily. Most of them will be in a local language. That's other problem, anyway. We cannot teach everything in a common language like English. So we have to make some standard operating procedures that have to be translated into the local languages of the nurses, particularly for them for easy understanding. That will help really a big impact on those people. So if you want to teach them, teach them in the local language. Some templates on that or something like that.

00:12:30  
*R:* So that the language is also stopping them from getting to education?

00:12:34  
*N:* Of course, that plays a major role and that it plays a major role. If you'd like to explain in English that they will watch that as the movie.

00:12:42  
*R:* Waiting for subtitles. [haha]

00:12:46  
*N:* If it fits subtitles, it's fine. They can understand at least 50% of that. If there's no subtitle is just there they'll just the dress and the color and your face, nothing on the conduct.

00:12:57  
*R:* Right.

00:12:58  
*N:* All right. So that's our main fact, if you want to make impact, you really have to go into their language.

00:13:15  
*R:* Do you know if there's a place to find more information if you want to know something about how to clean the instruments?

00:13:25  
*N:* My knowledge comes mostly from the books I have learned or some website I refer to. And also some of the knowledge, some of the standard operating procedures where I worked earlier. Before I joined with Dr. Gnanaraj in this project. I worked at some hospitals, so they have some policies and protocols. That's the knowledge which I have. And I was just sharing that with the people's, how much I can. But actually, I don't have enough. I just go with him for surgeries and come back. So I'm not properly involved in education or something. But I haven't found any other source at the moment, as a rural nurse in rural setups, to expand my knowledge.

00:14:22  
*R:* We've talked about improving the cleaning process a lot in the time we've been together. Can you think of any other things that you would like to improve or, that could be changed?

00:14:38  
*N:* OK. As of now, I personally dividethe instruments into three categories. One is a wet instruments. It means it is made of steel or plastic. Which can be kept in the Cidex. Others are called dry instruments which can be steam autoclaved and the others are ones that cannot be wet or cannot be dry [sterilised]. We have to follow some new method, something like gas sterilisation. Cables and these things. And this is my knowledge now. We generally follow these three things. I'm just giving a background of it. So if we have an instrument that cannot be sterilised with a wet or dry method, we have to follow the formalin method. Where we have a chamber where we keep some formalin tables active, formalin tablets, I mean. And we keep it overnight at the moment and then we feel let that it's clean. But we don't keep any indicators there, whether that instrument has been whether the cables and the rubber tubes has been autoclaved [sterilised]. So that's the trouble. But we believe that actually it has been sterilised. And we use that safely the patient. And about the wet sterilisation, at the moment, we are using a glutaraldehyde solutions. There are many companies brands at the moment in India. But in India mostly now commercially the thing is a lot more companies are coming with glutaraldehyde solutions, but we don't know how effective is it. Some are more cheaper actually. So that we soak mostly the plastic instruments which cannot be established using hot air or using steam and other instruments. Except sharps. The stainless steel instruments, a steel based instrument are actually be a steam autoclaved and also the cloths and the drapes we use. So these are the methods we do and with when it comes in the point of solution, we use, glutaraldehyde, formalin tabs and for wash at the moment, as they say, the washing powder and bleach. Sometimes we use some bathing soap, washing soap, in cleaning the instruments. But here the challenge is particularly about the electrical instruments like Ligasure handles or something like this. Like Vessel sealer, or cautery machines or something except...

00:17:34  
*R:* So cautery machines cause problems?

00:17:38  
*N:* And other challenge we have is the surface cleaners like cleaning the OT, we clean the floors with the mild bleach and there are some other solutions actually they're using. But actually we clean the surface of the instruments in the OT. We, at the moment, we are cleaning the surgical spirit. Yeah, that's all we are doing. And really you are. You might have saw that. Yeah, we just cleaned with some surgical spirit the surface [of the instruments]. So these are the normal chemicals we are using at the moment. And bio bio enzymnes at the moment we are not using in the rural setup till now. It's not because it's not affordable by them. Right. So um. And the challenged part is cleaning the grooves, particularly in the instruments, mostly in the rural setups. People are not bothering the hidden areas of the instrument. So if we find some easiest method that which can be made to [denature the proteins].

00:18:40  
*R:* has to take the proteins off.

00:18:42  
*N:* Yeah, yeah, yeah.

00:18:43  
*N:* De-proteinizing, uh, that the areas which is hidden a lot, you know, uh and doing it I think. Technically, I do personally, you might have seen that, I use the needle, a normal disposable needle to clean the grooves particularly. And I brush that particular area, so it get cleanled, I won't say sterilised a lot.

00:19:18  
*R:* The next few questions that I have are more about instrument repair and what breaks. So do you also repair laproscopic equipment?

00:19:32  
*N:* Frankly speaking, I don't have knowledge on the instrument. Uh, but I. Dismantle it and we fix it.

00:19:42  
*R:* OK. So, uh, what a pieces of the equipment break most often.

00:19:49  
*N:* Particularly, on a electro-cautery machines, electro-cautery instruments are very prone for breakage. Number one. And second comes the sharps. Particularly lap scissors, and these very minute tips, and also the tissue holdings are very prone for breakage.

00:20:15  
*R:* And so what we'll break specifically?

00:20:18  
*N:* Specifically at the joints, at the joints, It usually breaks and cables.

00:20:28  
*R:* But the actual pins in the joints, they break.

00:20:31  
*N:* Not at the pins, that the joints where the cable goes into the pins. You know, the soldering area. Usually most of the cables goes off. That's another one problem and. Yeah, that's the main things.

00:20:50  
*R:* And part of the electrico-cautery machines. What breaks?

00:20:55  
*N:* Electrocautery machines at the moment we have a lot of earthing issues. We say it's an earthing issue, I don't know exactly. You would also see a lot of grains during surgery. On the screen. Sometimes the camera goes off. So a lot of grains, if you use electricity particularly for cautery some to use in a monopolar or something. There'll be a lot of grains you can see on the TV, but we don't know exactly what's the problem. We have discussed the problem with some of the electrical engineers also, but they weren't able to figure it out. When you ask with the camera company, they will blame on the cautery machine. When you ask the cautery machine, they'll blame it on the camera. It's what happened here, the situation. But no one knows the exact problem.

00:22:09  
*R:* So during surgery, if a piece of equipment breaks, what would happen then?

00:22:22  
*N:* As a rural place, when we travel, we know actually what instruments mostly has these breakages. That type of handles, we have some spares. Usually we have some spares on that area, cables and graspers, shafts. For example, if it's a laparoscopy scissors, we always carry it two with me and one I as a spare. And also Ligasure handle sometimes I have two in most places. But in some places, may not have a spare. So naturally, the surgeon will be thinking about the other options, another method of doing the surgery, the old conventional methods.

00:23:14  
*R:* To they will convert it to open.

00:23:15  
*N:* Yeah. Because patients are important, not the machines. Our main priority is the patient on the table, not the machines that will be used.

00:23:34  
*R:* I guess that's it. Thank you very much. Thank you. Thank you for your time. Yeah, we've talked about the most things anyway. It's good to have them on record.

00:23:55  
*N:* I have spoken with many people up to now in the area of rural surgery. About different surgical innovative techniques, in surgery to improve the methods. They are taking a lot of initiatives in methods for conducting surgeries. And particularly you are the one actually who came first with this cleaning and sterilization and particular to the instrument modification. And I think this plays a very major part, but it is being missed in rural surgery. So this initiative needs to be expanded. So it plays a vital role and has a major market, if you see it commercially. But you have to think about it in a rural manner, how can we provide affordable things, that's very important.

00:24:47  
*R:* Yeah, exactly.

00:24:48  
*N:* Because really on cleaning solutions, on instruments and also transportation of things.

00:24:56  
*R:* Yeah. Because what I think is that the there need to be more surgeries done in general. The rural population needs more access, and laproscopic surgery can be a very good way of giving more surgery to people, but it has to be done in a safe way.

00:25:15  
*N:* See, one thing in India, what's happening at the moment is mostly in rural India, nowadays, they're getting safe access surgeries. They're getting safe access surgeries, but not laparoscopy, all general. Mostly there are surgeons who know laparoscopic surgery, but they won't practice it. They practice general, because general is safer at the moment in India, in rural India. Because cleaning the laparoscopic instruments involves a lot of cost. Maintenance of laparoscopic instruments, purchase of laparoscopic instruments, everything costs a lot. And they cannot afford that. So they just safely handle with the general instruments which can be steam autoclaved. That is way in India. They're still there following the general method of surgery. If you find some affordable method of laparoscopic surgery, why not? Mostly I feel the in surgeons who are coming up in rural India will follow that method. And for the patients will have the real benefits and the local communities.

00:26:31  
*R:* We need to find something that saves the nurses time because the because there's not many people that can help with the cleaning. And also, um, it has to be affordable so it has to be fast, affordable and easy.

00:26:50  
*N:* One more thing I want to remember. I don't know whether it's better to this study. It's not related to the study, but it's quite unfortunate for the rural nurse actually, understand that. You might have seen people going abroad. I am not meaning this for going abroad, I mean it for the knowlegde assessment.

00:27:13  
*N:* If someone is getting interviewed and selected for going abroad of the [unintelligable] level hospitals, most of the hospitals prefer urban nurses. Why? Because they feel at that urban nurses have knowledge and access to the modern methods of doing surgery. Doesn't mean that actually rural nurses are not interested in learning, that rural nurses are not interested in doing this. For my personal knowledge of my experience in the last 24 years in nursing. I find rural nurses are more dedicated and rural nurses are more interested in learning. But they don't have access to it. They have not had not practice because they are not provided the opportunity to learn how to do it. Mostly those who want to upgrade themselves in their profession are, in their personal life, being limited compared to the urban people. That is why mostly the nurses also moving to the cities, [instead of] to work with some rural hospitals. That's also the other major challenge the rural hospitals are facing. The nurses, if you see it, in the rural hospitals mostly, they'll be very less professional nurses. They'll have skilled the people, but not professional nurses, who are registered or something. Because the registered nurse doesn't want to come and work in rural India, because they cannot upgrade themselves. They have to just follow what the system is there and they cannot do something. You really have to consider the para-medical staff, so not only the medical people's, it's a teamwork.

00:28:54  
*R:* With paramedical you mean the nurses?

00:28:56  
*N:* Nurses and the housekeeping staff there, and even even, as you said, the cleaning staff. They all need to be professionally trained. We need to find some opportunity to make the training professionally acceptable and accredited by the other setup's. Actually they have good knowledge. I if you if you conduct a challenge, you can have a challenge on skill based training.

00:29:21  
*R:* That can be used as an opportunity as well, because if you work as a rural nurse, you get a lot more responsibility done as a rural nurse.

00:29:28  
*R:* But it's harder to drive an old car, then a new one, a new version of it. Yeah. And if a person can hold a old car, they can play the newest car. Yeah, but they need some knowledge of it.

00:29:40  
*R:* But if you if you convince people that if you're rural nurse, you get more responsibility than as an urban nurse. It can be an opportunity.

00:29:51  
*N:* See, as you said in an urban area, a scrub nurse will not have the knowledge of a circulating nurse. Circulating nurse will not have knowledge of the instruments.

00:00:04  
*N:* But in rural setting it is different. They have all the knowledge. But they need to have some input. If you want to drive a new car, you have to orient that driver to the new car. That these are the new things compared to the old version. This has been changed. Because the driving system is the same. One of the new methods, instead you put into manual gear, you have to press a button. And if you drive some more distance for 10 kilometers, he's used to the new system. And he'll drives more perfect than the other driver because he has knowledge in handling the old vehicle. Even if something breaks, he will even manage by itself. Actually, it's an asset to make use of it.

00:00:52  
*R:* Yeah. Not only in terms of quality, but you can convince people to become rural nurses just because you have to do more things, you need more knowledge. It's more of a challenge as an urban nurse.

00:01:09  
*N:* Yes, it's a real challenge at the moment, because the challenge here is not the professional knowledge is the mindset now of the people. If you speak to any rural nurses. They might always feel that I'm nothing. I'm worthless because they feel actually. They feel I cannot survive if they leave this setup. You only need a small orientation. That's what I'm saying. If you really give a small boost to these people's. I want to do something for the rural nurses. That's where I am, where we are looking at them with aren't that important hospitals of. And they see it really. But think about that. And even today, working after 15 years, I lost most of my knowledge. So I very sorry about that I'm not upgrading myself a lot. Because getting stuck with the surgeries going here and there. That's not an excuse, really.

00:02:27  
*N:* But we need some source or some platforms to spread knowledge. What I suggest is you are at a university. If you can make some literature in some easy manner, some easy version of handling instruments based on the Indian setup or based on under-developed setup. Okay. And make a common platform where we can share our knowledge. We can have some kind of a communication platforms, have some workshops or something among ourselves. And we can train some trainers. Like American Heart provides training of trainers, something like that. You can have them trainers program for the rural cases and from that actually they will take the knowledge to the local community. So such like that will bring a lot of change in the standard of service. You know standardisation only be brought if the para-medical have been knowledged.

00:03:28  
*R:* It's not that they don't want to it. It's all about training.

00:03:31  
*N:* Yeah, it's all about giving knowledge, training comes next after the knowledge. Then skill comes based on the knowledge. Based on the training. You can't get the skill without having the training. Without having the knowledge You cannot have the training. Yeah.

00:03:47  
*R:* And you need to know where to find it.

00:03:55  
*N:* There are a lot of platforms. Now, actually, whem I'm speaking of these para-medical staffs, there is no specific platforms for them to acquire knowledge about the protocols or the informations. Because on-line and Internets are coming up in India at the moment that they are not that much more in depth with their systems. So they just watch whatsapp and other things or something like that, you know, common platforms or common social media's for their personal needs. That's it. So if we can use such platforms. That also helps in improving the knowledge. They can put some literature into the Whatsapp group. Whatsapp group or something. And putting a literature there and asking them about how much they can absorb. We can watch how many people are actually reading it and improving their knowledge based on that. Yeah, that also really helps. These are small steps. Which can be initiated with less facilities. You have to try to do that.

00:05:08  
*N:* Actually, at the moment I'm doing some basic life support training, at the moment we are working. And I also explained to you that you're planning to have a training program for nurses. Yeah, about handling of instruments but unfortunately, I don't have enough knowledge of it. How can I be a teacher?

00:05:29  
*N:* Training a trainer is very important.

00:05:32  
*R:* I think the the problem now is that even if you would want to to organize a course like this and you you start collecting information, all the official information that you find is, recommendations from the device manufacturers that have to say you need an expensive autoclave, you need an expensive washing machine. Is it expensive cleaning materials. Yes. So they recommend the best possible standards for how to clean instruments. They don't recommend an acceptable standard, which is a lot cheaper. Yes. So there's a big gap in that area.

00:06:12  
*R:* So, yeah, with respect actually. Do you respect their hearing? Maybe we'll hear what they say, but we will not follow. We cannot follow.

00:06:22  
*R:* So then we need some other someother way of thinking to bridge the gap. Yeah, we're trying something else to bridge the gap.

00:06:31  
*R:* I feel the best option is you people, the universities who are really interested in rural areas. You always come forward and provide some knowledge for the trainers. You train the trainers from rural places. Yeah. Okay. You train them, few peoples. Then based on that training and you give them assignment, how do you teach them how to teach to the local people? They will go out, wherever they go and they can teach. You know, we can have a training put up separately, can go along with the conference, along with other camps, surgical camps. Most of the hospitals at the moment. As dr. Gnanaraj was just thinking about having a basic life support training for nurses, not just nurses, any health care workers in the rural setups. I was proposing it wherever I am going. The were really interested: Please, please come. Come, sir. Please come and teach us. They do not ask. They're not assessing us if we have the knowledge or not. But they're really interested. Really they're interested. So that's it. And they're eager to fill that gap. But I am very afraid now if I am eligible to go there and teach there. Unless I had a good knowledge on that. I can just go and present myself, I am a trainer so and so. But when you teach, you should teach the right thing. You should not teach what you know.

00:08:20  
*R:* For me it's the same When I come here and people ask me, OK, we're doing this, how can we improve it? Is this OK? Is this great? Is this correct? All I know is what the recommended standards are, but I don't know if something else is also acceptable.

00:08:34  
*N:* Then we have to sit together and discuss. When we speak of particular things for some time, we'll find out the shortfalls of that. Every shortfall has a solution. Everything has a solution to the problem. The solution is unknown.Yeah, you can find a solution.

00:08:54  
*R:* What I said yesterday with with Cidex, that it fixes the proteins.

00:08:59  
*N:* I thank you so much for that. Thanks to Daniel for that. Only I came to know yesterday from you that Cidex binds the proteins.

00:09:07  
*R:* Yeah, but I only knew that because I was just looking online at some of the materials that I had. So it wasn't because I suddenly realized, oh, wait, it fixes proteins. It's because I had external information.

00:09:20  
*N:* OK, I see. Then when I got introduced to you, when I speak to you, I come to know that glutaraldehyde binds proteins. Actually, we are simply relying blindly on Cidex for sterilisation. We're just cleaning the instruments and just putting into Cidex. The tissues in that It's getting hardened. Now actually I will, in my mind, that actually before I put the instrument into the Cidex I have to make clear there should be no tissues. Now I have to find asolution, How to remove all the tissues before putting into the Cidex.

00:10:03  
*N:* I need a proper knowledge to find out an enzyme solution. I should not do by myself.

00:10:13  
*R:* But as you say, it's difficult to find good information.

00:10:15  
*N:* Because if you said if you ask me, will you please find by myself? I will go by the normal mechanism, to use the bleach. But as you said, bleach will make pores. So this knowledge is not there with the normal people. I think if we share these problems with the nurses, they also bring solutions. They will have some knowledge on the local items. You know, they'll have things available.

00:10:54  
*R:* Mm hmm. Yeah, definitely. And do they do what you need to do is have people.

00:00:00  
*R:* If you think about the process that they're doing at the moment.

00:00:06  
*N:* In your eyes, you see what they're doing wrong in their eyes. It is their best matthod that they can do. Yeah. I never recognised that bleach makes this damage to the instruments. I doesn't want to really cause the damage to the instruments.

00:00:27  
*R:* I think that the most important thing I've heard so far is like everyone chooses this exact method because they think it's good and it's it's the safest for the instruments, because if you damage instruments, it costs a lot of money.

00:00:39  
*N:* Mostly the things we have to understand, because the studies and everything that's happening into the medical and other other surgeons groups and doctors group. Okay. So if you put some bleach on the instruments instruments, if they say if they're not saying anything, then yes, we feel that is the safest method because we feel that the teaching from the doctors are the safest one, because they have good knowledge of that.

00:01:10  
*R:* Okay.

00:01:12  
*N:* Instead of that. If we make the nurses independent in learning, to make the nurses more knowledgeable on these areas that brings the change in rural surgery. And that method must be affordable, accessible and available.

00:01:33  
*R:* Do you think it would be affordable for rural nurses to travel to places like Arsicon?

00:01:45  
*R:* Actually two years back I was discussing with dr. Gnanaraj, why can't we have a window for the nurses in Arsicon. Arsicon is mainly for rural surgeons. Yeah, there is no there is no group at all. There is no knowledge. There is no area for rural nurses, actually. No, there's no conferences happening in India particularly for rural nurses. General nurse it's happening, there's a lot of conferences, that's what is going on. But actually no rural nurses are thinking about that. Also the hospitals also. Because if they send the nurse for a workshop, then the hospital has to think about, some other peoples to replace them and it's becoming a lot of problems.

00:02:27  
*R:* So a conference for rural nurses is not really an option.

00:02:34  
*N:* We have to think of the management also to send their staff for rural training. Training programmes for the nurses, that that's what we can do. Knowledge, you know, the hospitals always will ask to train their staffs on their home set up. It's two or three nurses in a hospital, they don't want to send a nurse up the place to get trained. But they're interested in training the staff if you come and train them in their own place. All right. For the two person, one person has to be there for three days to train them. And that's a method we are following for surgeons training. But, uh, but we can have some conference, like the regional conference. We can have one one at for example Sittilingi and Gudalur in their place, in their own setups of bringing some nurses for three days and another day there? It's a training program, it's not just a one day program.

00:03:32  
*N:* Before developing the program we need some trainers on that. I really can take part in that one. And I am really interested on that as well at the moment because I am already working here for a long time. I want to upgrade myself as a (trainer?). If not happen, I feel worthless. Why should I continue like this same for long years, you know?

00:03:55  
*R:* Well, I think all you need is a good source of information. Because you're very keen, you would like to be the person who shares the knowledge. But as I hear, is that you're afraid that you don't you don't have the knowledge yet to share to other people.

00:04:16  
*N:* See, it's not afraid that I don't have the knowledge. I can aquire knowledge. And , of course, I acknowledge that the knowledge is available online and knowledge is available in books, knowledge is available in journals and everything. Frankly speaking, journals are not affordable. I cannot afford with what I have at the moment to have journals, online or offline. Of course I have internet access but actually very less time I'm spending on this. You see I'm not a Facebook user, Twitter or something, I just spend some time on the Internet and e-mail or something on Whatsapp, that's all. Whatsapp I never use during my work hours. This is all the situation. I used to spend some time on some specific websites just to get some acquire some knowledge. But I don't have a discussion, It's a one way communication. You know, I can pursue the knowledge from that, but I cannot casteen it. I cannot rationalise, you know. If I speak to you, if you are explaining me something, giving me some knowledge, then if it gets some thought. I can ask you. Danny, why can't we do something like this. We did this or something. I can question you then you can clarify that for me. This has not happened. If there's a problem. No. So, uh, when you rely on these sources, what's available at the moment, I may be taking wrong information. I don't to take the information as how I work to the learners. Even if they question me, I have to give them me clarified answer. That's what I'm waiting for. Yeah.

00:05:59  
*N:* We need to train trainers. Some training programs like maybe a ten, fifteen days of, exposure to such things. I already have some syllabus to put up, some training. One month training program, something then that helps that the acquire knowledge on particular area, specific area, and that knowledge this person will go and spread to areas. That will bring the change.

00:06:39  
*N:* We are actually thinking about this training for a long time. I already made this book. Have you seen that book? I already made a book for the basic life support.