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Welcome to today's interview. I'm delighted to be joined by Dr. Jigisha Patel.

Jigisha is an independent research consultant and the founder of Jigisha Patel Research Integrity Limited. She comes from a background having been a doctor and worked previously at Biomed Central, setting up one of the first research integrity teams. So Jigisha is here today to talk to us all about her work and experience within the research integrity field.

Welcome, Jigisha. Thank you very much. I'm very happy to be here.

I should also quickly introduce myself. My name is Mary Miskin. I am the Operations Director for Enago Charlesworth and also a member of the Board of Directors for the International Society of Managing and Technical Editors.

And I'd like to kick off by learning a little more about your, your background and your journey to becoming a research integrity consultant. So I know that you spent over a decade in medicine and academia before transitioning into a role in publishing, initially as a medical editor and then you shifted into research integrity. Could you explain to me how and why you've navigated these career shifts? Yeah, I mean, I, I never imagined I'd be where I am now.

I never imagined I'd be a research integrity specialist. I mean, this didn't exist when I was thinking about my career. So I started off in medicine and, you know, working as a doctor in the UK and as part of that process I was, I did a PhD as well.

So I was doing research and writing it up, trying to get it published and having to navigate through ethics committees to get my research done because it was on humans, so it was human research. But even having done all of that, I had absolutely no idea about what happened after you submitted a paper. It just went off into the ether with the publisher and then you'd worry about getting the peer review reports and worry about replying to those.

And then eventually your paper got published and I never thought more beyond that. And then around about 2000, BioMed Central was popping up in my inbox. You know, the emails from BioMed Central were popping up in my inbox and that was really interesting.

And it wasn't research integrity that piqued my interest. It was more the whole idea of open access. And that's when I started thinking about publishing.

And I really like the idea of open access, allowing research to be accessible to everyone without, you know, freely accessible to everyone. So I was aware of Biomed Central and then there was a job for a medical editor, which I, I went for and got. And it was only after I was in that post and I was in charge of several of the Biomed Central series medical journals that ethics issues started cropping up and I didn't know how to deal with them.

Fortunately, I was based in London and the committee on Publication Ethics office was also in London, very close to where I worked. And so I started going to those forum meetings which were very small at that time, you could go face to face to a forum. But that's how I was taught about research integrity.

And because I was doing that in within the company, I became the go to person for all research integrity issues. So I graduated from my medical journals to the whole portfolio and became the person to ask about research integrity. And so it sort of happened.

I never intentionally thought, right, I want to become an expert in this. I just sort of acquired the knowledge and experience and then thought, oh, I quite like this. And then we expanded, grew the team, more people became part of the research integrity team and sort of, that's the road that I found myself on.

But there was no great plan to begin with. It just happened to me, really. And thinking back to when you say you first started to encounter these research integrity cases, what were the kind of problems you were encountering? And kind of, what sort of time period was that? You said it was early 2000s when you first started at BioMed Central.

Yes, I think the fact that I was a medic already and I'd done medical research myself on humans gave me a really good foundation for spotting issues. And the, the early issues that I was spotting is when I would read a paper. And based on my own experience of doing research in humans, I thought, hang on a minute, something, there's something odd here.

It doesn't seem like they have obtained the right permissions or it doesn't seem that consent is right or maybe the design of this study is not answering the question that they have hypothesized. So it was a lot, it was very medical to begin with, but in parallel with that, I was learning about the standard sort of publishing ethics issues like plagiarism and data theft and authorship issues. So they then started cropping up as well.

And I was learning how to manage those through going to COPE forums and through just experience. But I mean, I think my medical training really was what made me very aware and helped me to spot those research integrity issues in medicine. Okay, you've talked about how you led one of the first dedicated research integrity teams, sometimes investigating probably quite complex cases of peer review manipulation or paper mill involvement.

Could you talk us through the approach that the team would take to investigating these kind of cases. And you've kind of touched there on what some of the red flags might be that kind of jump out at you to alert you to these potential cases. Yeah, I mean, that's a very.

That's a complicated question, because the range of issues that you see is so broad. So I could break it down into issues related to individual manuscripts. So you might have an individual manuscript or a publication where somebody raises an issue.

And if it's a publication, it's likely going to be a reader who's going to say, there's something wrong with this research or there's something wrong with this figure or whatever. And the process for that involves. First of all, the first thing you have to do is to verify the allegation.

Because just because somebody makes an allegation doesn't mean it's true, doesn't mean you necessarily need to do anything. So that is the first step. And then if you feel through your investigation, you might go back to the person who raised the red flag and ask them for more information, you might do your own research yourself.

And then once you think, oh, this is an issue, there is something we need to look into, the next thing would be to go to the authors and give them the opportunity to explain or provide their point of view. And sometimes that helps to clear up the issue. You know, for example, if it's an authorship issue, it might be that someone has said, oh, I should have been an author on this.

I did this piece of work. And you go to the author of the paper and say, oh, did you mean to leave this person out? And they might honestly have made a mistake and say, we're really sorry, we should have concluded them. And that's quickly resolved.

We just add the person on as an author. And so there are issues like that, but they can get more complicated if the author then, you know, rebuts the allegation and says, well, no, this is not true. You know, we didn't steal the data, or they weren't part.

You know, they didn't do anything, so they don't deserve to be an author. Or you might get responses like that. And then it starts getting more complicated because then you have to establish whether.

Who do you believe? And that's really tricky for an editor in chief. Investigating a case or someone like me is. Then you have to work out on balance, how far do you believe what the authors are telling you against what the person is making the allegation is telling you.

And then that's when you might involve other stakeholders, like you might go to an institution and say, can you verify who did this work? Or if it's a case of research misconduct, where, say, the authors claim that they obtained ethics approval for research in a different country that might involve seeking help from other organisations. Like, I've written to the Ministry of Health of various countries and said, hey, do you know this research happened? Did you approve it? Were you aware of it? So it can escalate up to the highest levels. And for medical research, I feel you need to do that.

You can't just sort of ignore it. You have to sort of try and establish the best you can what, what happened when this research was carried out and who's right and who's wrong, because then you've got an obligation to correct what's published. So that's just for one issue, for one manuscript.

It can be that complicated. And then the whole issue of Paper Mills is a different, different story completely. And you mentioned there that you have to establish who is right and who is wrong.

And do you always come to a conclusion on all cases, or are there some that maybe never get resolved? Yes. The problem is that, you know, as publishers or as journal editors, you don't have any authority to investigate the actual nitty gritty of the research and who did what. You can't call people in and interview them or demand to see their notebook or their data or their evidence.

And even if you did, you, what would you do with them? That is why we need to ask institutions to help. And sometimes they're brilliant and they do, they do all of that work because that's where the research was carried out. So they're able to establish who's right and who's wrong.

But often that doesn't happen. And so then you're left with a balance of probabilities. And then you have to think, well, am I, you know, as an editor.

As an editor I would think, well, am I comfortable with leaving this research published? When someone has made an allegation and it's a combination of balancing the probabilities and it's a bit subjective and it might be that you think, do you know what? I'm not happy leaving this research because I'm worried that it wasn't done ethically and in those cases you would. Then perhaps you can't do anything definitive, but you might put up an expression of concern on the article to let readers know that there is an issue here, that perhaps there was a problem with how it was carried out and that happens Quite a lot. It is very much balancing likelihoods and probabilities rather than getting definitive evidence with researching integrity cases.

Okay, then, moving on to think specifically about peer review manipulation. So this isn't a new phenomenon, but it's become more sophisticated than just fake reviewers. How prevalent do you think this particular issue is nowadays? I think it's very prevalent.

And again, there is a whole spectrum of behaviors and activities that come under peer review manipulation or peer review misconduct. And it can range from peer reviewers just working on one manuscript who do unethical things like might steal ideas or they might ask the authors to cite, you know, their own work in order, and then the authors feel coerced into citing these, the peer reviewers research. I mean, that's peer review misconduct and that's an individual peer reviewer who is abusing their position as a peer reviewer to get some kind of gain.

So I would count that as peer review manipulation. And that can happen on an independent individual manuscript. And the problem is that there are no standards for peer review.

There's no international standard for what the quality content of a peer review report should be. There's no way that peer review reports are assessed for quality independently. The editor decides whether a peer review report is all right or not.

And because there's no standard, some things are peer reviewers will get away with things without it being labelled as misconduct because there's no internationally agreed standard of what a quality, good quality peer review report should be. So that's at one end of the spectrum where one peer reviewer might be abusing their power as a peer review or more manuscript. But then, as you were mentioned, there's peer review manipulation on an industrial scale where peer review is actually being hijacked for the purposes of getting papers through so they'll get published, so then authorship can be sold.

And that's the whole paper mill scenario. And again, I think we were not aware that this was happening until quite recently. I think groups of researchers will create peer review rings with their pals and then agree to peer review each other's work so it gets through.

But then there are other commercial paper mills who are actively committing fraud. You know, they're hijacking the peer review system in some way. They're creating fake Personas for peer reviewers or creating falsified emails for peer reviewers and managing to take control of peer review.

And I think that's been going on for a long time as well. And we are, we are now just more aware that it is happening and people are spotting it more often. So I think it's a combination of increasing awareness that it's going on as well as it actually increasing in frequency.

So I, I think it's probably still on the rise. I expect it will plateau at some point, but it's, it's still a huge problem. I'm probably going to be getting worse before it gets better.

And you talked there about there being no agreed standards. Do you think there is more the industry could be doing to try and prevent peer review manipulation? I think again, I think in terms of preventing manipulation, the industry has started to do quite a lot because of the issue of paper mills. Everybody's woken up to the threat that paper mills is causing for the whole industry.

And so now reputable publishers are thinking we need to monitor our peer review and they're doing this in various ways. So I think they're beginning to. But I think the whole industry could do more, particularly around peer review in collaborating and agreeing on what standard should be, what training should be, how peer review is, Peer review reports are evaluated.

So it needs to be a bit more joined up. I think lots of people have done things on an individual level or a company level, but some kind of agreed standard across the board I think would be helpful. And do you see there being movements towards that within the industry? I think it will happen eventually.

People are recognizing the needs for collaboration and agreeing on industry wide standards because it's the variation and the lack of standards that's causing problems in the first place. So. But yeah, it's a slow process.

It will take a while. Okay. More recently there's been papers that have been found to have been published which do include telltale signs of generative AI responses.

And again, this questions the vigour of the peer review process that might have taken place on those papers. How do you think technology can help in improving the robustness of peer review? And furthermore, do you think AI tools or technology can detect the issues in peer review, such as peer review manipulation? Yes, I think technology is, is crucial. It won't be the answer.

You know, it's not going to solve the problem because technology, the tools that are being used are just that. They're tools which are part of a whole toolkit of actions, activities and methods for detecting misconduct and manipulation. But I think certainly tools that detect that.

There's sort of tools that detect the use of generative AI and there are tools that are used to detect other types of misconduct. And I think the tools that are used to detect other kinds of misconduct have certainly have their uses because they can do things that Humans can't do quickly, so they can detect patterns. And certainly with paper mills, the telltale signs are often patterns of behaviour.

You certainly, you'll see the same email being used for different people, or you suddenly see a change in the number of submissions that a journal is receiving, or you may see changes in submission acceptance rates in journals. Now, these are sort of big picture patterns that for an individual to go through and look for would take forever. Whereas these tools, I think, can very easily identify that these things are happening, identify changes in behaviour, changes in pattern, you know, odd email addresses and things like that.

And so for detecting paper mill activity and also looking at individual manuscripts and looking for image manipulation or tortured phrases or signs that this manuscript has been fabricated, I think the tools are very useful with the caveat that obviously the output of the tools has to be looked at by a human to interpret what the tools are finding, because there'll be innocent reasons for what the tools find. So the innocent authors will get caught up and be flagged as of concern, and that's a worry. So they'll always need to be a human in place to look at the outputs of these tools.

And I think the other thing that's lacking is that the tools themselves need to be validated. So tools are sort of flagged up as, oh, here's the answer. We can screen manuscripts with this tool, but there's no independent validation of these tools to prove that they're doing what the creators say that the tools are doing.

And that is really valuable and crucial because then that gives you confidence that the output of the tools is trustworthy. I think that's sort of quite neglected at the moment. Everyone's rushing to create tools, but there's no, no one rushing to then validate them and say, yeah, you know, we can confirm that they are doing what the claims are that they're doing.

So you would like to see more published papers that verify the outputs of these tools. Independent validation? Yeah, because, for example, if you had a case and a tool, you used a tool and the tool said, oh, this is a dodgy manuscript. You know, it may be papermill manuscript at the moment, you really.

Based on the output of the tool, there's not much you can do because you can't say to an author, oh, our tool says your manuscript is fabricated. Because then the author will say, well, you know, who says the tool is right? Yeah, and you're sort of undermined. You haven't got the strength behind your allegation.

Whereas if there's evidence out there that the tool is accurate to whatever center, then you can support your actions by saying, well, this tool, which has been independently validated, shows that your manuscript is likely to be fabricated. And so then you have better, stronger evidence to support the allegation. Sorry, go ahead.

You go ahead. No, that's the crucial, that's what I'm seeing is missing is there's excitement about the use of tools, but without the validation, it's limited because authors can come right back and say, you know, so someone's created a tool who says it's doing what you say it's doing. You know, the tool's wrong.

I'm not wrong. And that's where things are going to get stuck, I think. And I do want to see more validation studies or some validation studies.

And you touched there on the image manipulation tools, which I think are gaining in popularity. And I guess two questions related to, to those tools in terms of the validation. Potentially it's quite easy to prove where a piece of image manipulation software has identified manipulation.

Do you think things like image manipulation screening could become as prevalent as plagiarism screening has become? And do you think it comes back to your question in validation? I guess these tools are good enough to catch all of the potential cases of image manipulation? I do think that the tools will become as prevalent as the plagiarism detection tools, yes. And I think image manipulation is one of the easier types of misconduct to detect because as you say, it's easy to validate that you can prove that an image is not real quite more easily than proving that an entire manuscript has been fabricated. So, yes, I think that these tools are going to be used and become commonplace across the board, whether they catch everything.

Again, that all, again, depends on whether, you know, we need data on how effective they are. We need data on what are the false positive rates, what are the false negatives rates, because that's, that's the data we need to be able to judge how much we trust the tool. And even with plagiarism detection software, it's used wide, you know, widely, it's been around for years, and yet it's, it doesn't get it right.

Again, you get a number at the end of the, you know, you, you run it through the software, you get a percentage, but then you still have to use a human to have a look at it and see whether that percentage is okay or not, what part of the manuscript has been copied. And I think that will still all be needed to interpret the outputs of the tools. Yeah.

Okay, so we've talked there about how technology and AI can help in screening, but obviously there's kind of risks around AI, making it a double edged sword in terms of how authors may be using AI to potentially generate content and so forth. Do you think the current guidelines are stringent enough to address potential editorial issues that are a result of hybrid intelligence within the peer review and editorial processes? And if not, could regulatory bodies like COPE build an ethically robust future of publishing supported by hybrid intelligence within research, writing and review? So at the moment I think there are no standards or guidelines, and that's to be expected because it's been such a fast moving field. The use of generative AI tools just sort of kicked off last year, the year before last, and it's moving so fast that I think it's taken publishing by surprise and we're sort of trying to catch up.

And at the moment there is some consensus on what some of the policies around the use of generative AI should be for authors. So, you know, for example, lots of publishers are now saying it can't be listed as an author, but the use of such tools have to be transparently declared. And that's sort of as far as we've got in coming to a consensus.

I think most people agree on all of that, but that's woefully inadequate because I think authors are miles ahead. I mean, researchers are using tools all the time for all sorts of things related to their research and, you know, most of it will be legitimate. Fair enough.

It helps them do their research, it helps them get through things quickly. Some of it will be not acceptable. But where that line is drawn has not been agreed by the publishing industry at the moment.

And that is the biggest challenge for research integrity teams and editors and publishers trying to deal with research integrity issues because they don't have that framework to work against. And if you think about it in terms of, if you compare it to medical research and the rules and regulations around medical research, so medical research was carried out without any regulation whatsoever, and awful things were being done to human beings because nobody was regulating it. And then as a community, as a whole, on a global level, people said, whoa, this is awful, you know, because there were experimentations happening during the war and all sorts of sort of scandals happened.

People got together and said, we need a set of guidelines, we need a set of rules which people must follow if they're doing research in human beings. And so now we have the requirements for ethics committee approval, we have the concept of informed consent, we have the concept of protecting privacy. Of patients.

And that all came about because there was a whole sort of community global effort to agree some guidelines. And I think this is very similar. At the moment, we're in the early stages.

There is no regulation. People are using AI tools as they wish. And we're far.

We need to get together. And so these are the, these are the standards that we need to impose as an industry to make sure that this research, the AI tools are used appropriately in academic research. And that is not.

Hasn't happened yet. So that's where we are. We're in the early.

As with medical research, we're in the early stages where awful things are happening, where awful things are happening now, but we haven't got there yet in terms of regulating it properly. Thank you, Jigisha. And on that note, we are out of time, so I want to just say thank you very much for sharing your knowledge and expertise and giving us the timgoe today to talk.

It's been really informative for me and I hope all of our listeners learn a lot from our discussion as well. So thank you. An absolute pleasure.

Thank you so much for inviting me to do this interview. You're welcome.