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## Associate Professor Jodi Oakman.

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### Description: Associate Professor Jodi Oakman discussing MSD in the workplace and the APHIRM Toolkit .

**MADONNA KING:** And welcome again to our MSD Symposium. I'm Madonna King, and any problems just press "live support" on the top right‑hand side of your screen.

Our next speaker is Associate Professor Jodi Oakman, who leads the Centre for Ergonomics and Human Factors at Latrobe University. Jodi holds a medical research future fund translating research into practice fellowship. She's published widely on the area of occupational influences on health and leads a range of projects concerning the impact of work on people's health, with a particular focus on MSDs. Jodi, it's lovely to have you with us. Welcome.

**JODI OAKMAN:** Hello and welcome. Jodi Oakman here from Latrobe University. It gives me great pleasure to be able to talk to you this morning at the Work Health and Safety Queensland MSD Symposium. Sadly we can't be together in person, that was a really good call by the organisers as we are home in Melbourne, again. Nonetheless, we are a year later than I would have been presenting ‑ giving this presentation, but that's been a good thing, because we've undertaken some work last year that I'm able to present to you on this topic about closing the‑evidence‑to‑practice gap in MSD prevention and what do we need to do. So thank you.

            I want to talk to you today about implementation science, about complexity, and then talk about how that fits with evidence‑to‑practice gaps. And then I'm going to talk to you about a participative hazard identification and risk management toolkit that we have developed at Latrobe University to address some of these evidence‑to‑practice gaps. I'm not going to dwell on the size of the MSD problem because I don't think I need to convince anyone here at this MSD Symposium. We know this is a huge burden of disease problem. It accounts for, you know, over half of our serious claims in terms of compensation claims. It is one of the leading causes of disability, low back pain along with neck pain, in most countries regardless of economic development, and there is plenty of material to support this.

            MSD’s are complex, multi‑factorial disorders caused by exposure to a range of different workplace hazards. We focus a lot on addressing the factors after people have been injured and much less on prevention strategies. A real problem in Australia is the lack of funding for research programs in this area, given the size of the problem and the ongoing implications for people with musculoskeletal disorders and the impact on their working life.

            This is even more of problem now with our ageing population, the post COVID pandemic work life and what that means ‑ and I don't think we have those answers yet because we are not post pandemic ‑ and I think we really need to think about how we are going to improve musculoskeletal disorder prevention programs and underpinning that needs to be a really serious attempt at having some good quality longitudinal research programs. And we can look to some of our northern neighbours for programs which are like that.

            There are many challenges in work health and safety with regards to MSD prevention. And so I have artificially broken this up into thinking about diagnosis, dissemination, and implementation and these are part of a spectrum. But one of the changes, I think, is that we need to understand what the problem is, and we have many tools for identifying these particular issues.

            One of the things that we are less good at is the dissemination and implementation part of the problem.

Many of the work-related injuries such as MSDs can be prevented by using evidence‑informed solutions, but when we actually think about the dissemination and implementation phases we might need to embed strategies in these programs to ensure that the uptake is both effective and sustainable.

            It's different to clinical diagnosis. So we can look to how some of those programs might be undertaken in a clinical sense, but one of the things is that it can be very difficult ‑ one of the challenges, it can be very difficult for us in OHS or WHS to actually get employee buy‑in for OHS innovations. And one of the challenges is that sometimes we're trying to do this as an external; get organisations' buy‑in.

            So we are sort of stuck somewhere with the diagnosis. I think in some ways we don't always get that particularly right, and I will come back to that later on when we talk about MSD prevention tools. But we definitely need to do more work on the dissemination and implementation phases.

            So why? One of the issues is that we need to really understand what are the limitation and enhancing factors at an individual worker, organisation and societal level. We are used to thinking about systems, or we should be used to thinking about systems. And when we think about what are both the barriers and enablers at these different levels we increase the likelihood that our research outputs ‑ our intervention programs will lead to improvements in worker safety. So the onus is on both those of you in the audience who are practitioners and those in the audience who are researchers. And really these need to be working together. It shouldn't be ‑ they needn't be separated.

            There are a number of challenges in translating research into practice. And one of the things I think we need to think about is the equivalent, if we have a whole bunch of life‑saving medications or in this case strategies to actually address a particular problem, MSDs is what we are talking about today, but then we don't tell the workplaces about those. We don't make sure that it's publicly available, we don't make sure we are informing our workplaces when we are operating as practitioners. And so we're not dispensing that information to the people that actually need that. And we're not providing guidance about the management of its effects. So as I said before, this is both a practitioner and a researcher problem.

            There are many good examples of where WHS interventions are effective. We need more. Our effectiveness research and evaluation is lacking, but what is lacking even more is not about how they have been integrated into widespread practice. From a research perspective where there is an increase in requirement to provide evidence of transition plans in grant applications to address these issues, but there are examples from clinical and public health that we can use from. There's no need to reinvent the wheel, but it does require that WHS professionals are using evidence‑informed practices.

            So let's shift a little bit to thinking about ‑ from implementation to thinking about complex adaptive systems and they are linked. Complex adaptive systems can be defined as a collection of individual agents who have freedom to act in ways that are not always totally predictable and whose actions are interconnected. And we need to start thinking about workplaces as complex adaptive systems. That is they are messy, with individuals who don't always behave in ways that we might want them to.

            And we don't always have a perfect understanding of the different parts, the individual parts, and understanding those individual parts doesn't automatically convey a perfect understanding of the whole system's behaviour.

            We are used to thinking about, as I said before, the notion of these different levels. But I think we probably need to become more nuanced about thinking about how those actually impact the individual, the decisions that they make and their behaviours. But not only that, not only at the worker level, but the individuals at all of those different levels.

            We need to think about all these different parts. We need to start thinking about our OHS problems as like big jigsaws with lots of parts, and often very complex jigsaw puzzles. So we need to be thinking about complex adaptive systems, we need to be thinking about leadership and its influence on the sorts of programs that we can implement; so I'm thinking about sort of organisation stages of change. The context of particular organisations; so what are they operating, what are the external pressures on those. Us as occupational health professionals. The implementation strategies that we need to be considering to support interventions. What do we need to do to ensure that we've got uptake of our particular ‑ is an organisation ready for a particular intervention? Or we need to think about some different steps to get them there.

            And then we need to think about participation or ‑ sorry, we should be thinking about participation all along the continuum. Involving workers and supervisors, those that are going to have to undertake those interventions, involving them in the discussion.

So now thinking about evidence‑to‑practice gaps. And I want to talk about four gaps: Narrow focus on single physical hazards; insufficient worker participation; focus on training as a solution; and inadequacy of current prevention tools.

            That doesn't mean there is not more than four, but I think these are four that really ‑ if we address these four really starts to capture the evidence‑to‑practice gaps.

The first one, a narrow focus on physical hazards, many of the current tools that we use in work health and safety are focused on addressing single physical hazards of workers. So individual task‑specific identification tools. So they are very narrow in their focus. This is underpinned by many of the regulatory and guidance documents ‑ sorry to the regulators there ‑ about providing workplace practitioners, about how to manage MSD risk from psycho‑social hazards. And note here I'm talking about MSD risk from psycho‑social hazards, not stress‑related mental health disorders. And I think that's a key point of differentiation there, because workplaces that think they've got an MSD problem won't necessarily go to the stress‑related guidance material to look for management of psycho‑social hazards. And we need to package those more effectively together to help workplaces both identify and then support them.

            And I will come back to other work that we've done where we have found this has been a particular problem.

            So why do we need participation? Or why is participation a problem? One of the issues we've got is that many of the tools that we've got are observational. I just said that these are neither focused on snapshots in time, and many of them use observational methods. So looking at people doing a particular task, part of their job for a period of time, and then using whatever the various assessment tool is.

This is akin to sort of throwing some darts, and you may or may not get the Bullseye, depending on whether you catch the worker at the right time, the busy time, the hard bit of their job. It may not even be the right thing that you're assessing. By involving and engaging workers in the process, much more likely to understand what the particular issue is for them, which may or may not be what you were going to measure.

            Just to remind people about psycho‑social hazards, and we can think about these conceptionally as part of the organisation or the social context. So the things around job design, hours, workloads, levels of control, or social context about being the communications with managers, the sort of culture relationships sort of hazards. And this is important, because when you think about the observational methods how can we measure any of these particular hazards if we don't ask workers what they are.

            So psycho‑social hazards require involvement of worker participation because they are not observable. And they are not currently used in risk management practices, and mostly, as I said before, we rely on these observational‑based methods. This is not without problems. Workplaces in general have some concerns about asking workers their opinion and are particular about psycho‑social hazards. This particular project in aged care really typifies what lots of managers feel: "I must say it may open the flood gates and I'm a bit nervous about it". And I think that's okay. We need to understand that workplaces might be nervous about asking workers and we need to address that. So if we understand that that's a potential barrier up front, then we need to work out strategies to address that.

            So the third gap is this focus on training as a solution or using low levels of administrative controls in the hierarchy of risk controls. And this can be training, or EAP programs for stress‑related disorders; things that focus on fixing the individual are in ‑ rather than addressing the hazards at source which may be higher in the work system. So those organisational hazards which may occur well above where the individual work is.

            We have done a number of projects where we have looked at the barriers to effective prevention of work‑related musculoskeletal and mental health disorders and looking at what those gaps are. So we've spoken to many managers, WHS managers on what they see is the particular problems around managing musculoskeletal and mental health disorders, and really trying to understand what are the challenges with psycho‑social hazards. Because for the physical hazards, mostly, they are sort of tangible. People understand what they need to do. The new or the more challenging part is to incorporate psycho‑social hazard identification and control into their MSD risk management programs. They understand for stress‑related mental health disorders why that might be necessary ‑ it doesn't mean they do it or they are doing a good job ‑ but they understand why that might be needed. The MSD piece is still somewhat of a challenge.

And we tend to see even with the psycho‑social hazards and the stress‑related disorders we still see the same sort of patterns. This using these administrative controls even though the evidence for them, for working, is really poor.

            Sorry, the evidence is strong but the evidence supports that they don't work.

So gap number four. The inadequacy of current tools. We have recently completed a piece of work for the Centre of Work Health and Safety, and this report, are hot off the press. Not yet released, but very shortly. So you should be able to find it on their website around the available tools for the management ‑ comprehensive management ‑ so that includes psycho‑social and physical hazard identification and then control for MSDs and MHDs.

            This was a significant piece of works that involved two literature reviews and then about 30 interviews ‑ 29 interviews with key stakeholders in WHS. So I'm just going to give you some really brief highlights here.

            We had 548 studies. Anyone who has done a systemic review will know that that's a huge number of studies to deal with. What we were actually interested in really was what the tools were. And we found 137 on physical hazards, 254 on psycho‑social, 228 on comprehensive. When we actually unpack that further to look at the tools, we found 30 on physical hazard tools, 35 psycho‑social and 16 for both. So you can see what is starting to happen here.

            We then went and interviewed WHS managers and professionals with a list of these tools to understand what they were aware of and then what they were using. We can see there that mostly people were aware of somewhere between one and 13 tools. What we then asked them was about were they actually using them. And you can see there that despite people being aware of the tools, when we talked about what they were actually using the numbers drop off quite significantly. And some of the problems were things like complexity, like practical limitations, they couldn't see the gain, or they felt there was excessive cost.

            The positives they saw were outcomes, clear and measurable. They liked an evidence base and a scientific look. They wanted simple and easy to use formats, targeted and participation.

            So we can see there, there is some changes between people being aware of these tools and the implementation piece. So they wanted the tools to actually support them in identifying psycho‑social hazards and then what to do about them. They wanted intuitive tools and they wanted digital tools. So this starts to give us ‑ this gives us some evidence around what people are actually looking for.

            The next piece of work ‑ and I don't have time to go into this in detail so I encourage you to go to the report, and there are several articles as well to support this ‑ was a final matrix which will be available which contains 27 tools. And they had to meet some criteria to be on that particular matrix. They needed to be accessible, they needed to be freely available so that practitioners can actually find the tools and then be able to use them.

            And there were 27 tools on that final matrix: 20 physical, four psycho‑social and only three comprehensive tools that address both physical and psycho‑social hazards. So that's a firm ‑ I will talk to you about that shortly. That's the NASA TLX and the QEC and people who know those tools will know that actually the NASA and the QEC, they are really quite brief tools, they don't really tick the implementation box. Although that wasn't part of the overall production of this matrix, they don't really give people support in taking them through a risk management cycle in comparison to the APHIRM toolkit which does.

            In relation to the barriers to MSD risk management, and this is really important if we go right back to the start about understanding what the barriers are so that we can actually improve that implementation piece. We see there, this is two parts. A summary. One is about the literature review which we did which looked at what those barriers and facilitators were to MSD risk management. And then the interview data. And I think the key take‑home message here is that most of the barriers to MSD risk management are actually at the work organisation and job design level in the system.

            So this is the barriers, but most of the strategies that we use to target MSD prevention are down here at the individual level. So we are seeing ‑ and the tools that we have are targeted in individual level, not at the organisation and job design level. So we have a mismatch there between what the evidence says we need to do and then what we have actually got to do something about.

            So we need to change our thinking in terms of MSD prevention. So we need to move away from a linear transactional approach and accept a more winding, messy, method ‑ not method, a more winding approach to MSD prevention which takes into account the messiness and the complexity of the problem. These are complex aetiologies, and they require approaches which take into account that complexity.

            So there is a real shift from what we have actually been doing.

            So now I am going to shift and finish this presentation by talking about the APHIRM toolkit. Which as we saw after that extensive review is one of the very few tools available ‑ publicly available tools which is accessible, founded on principles of implementation science for workplaces to prevent musculoskeletal disorders.

The APHIRM toolkit is evidence‑based. It brings together that physical and psycho‑social workplace hazard management. Participative. And it provides support through the full risk‑management cycle. And it provides benchmark data to support workplaces in measuring ongoing improvements.

            I refer you ‑ we have published widely on the toolkit and you can go to our website and find some of these papers where possible on the toolkit and what it's about, and in particular the APHIRM toolkit and evidence‑based system really outlines how we've used those principles of risk management ‑ sorry, those principles of implementation science.

            The toolkit is designed to support workplaces in managing MSDs. And so in providing them with guidance and support, in line with principles of implementation science throughout that full cycle. It provides the guidance at each stage so that organisations can work through the process, and it's in a schema that is familiar to them; the risk management cycle.

            Just to remind you of our website. And if you go there you will be able to find the relevant details. You can log in to use the toolkit in principles of it being freely available. And you can log in and have a look yourself. And this is what you will find. One of the things that we have been very clear in the development of the toolkit is about the reporting structure being ‑ there is a whole range of different reports, but workplaces can get feedback almost immediately on their ‑ on the different parts of the survey results and other reports in very clear ways that employees and their supervisors and managers can understand and interpret.

            So in finishing, a substantial evidence‑base supports the complex aetiology of MSDs. And so this necessitates a change to our current approaches so that we can embrace that complexity and then effectively manage that. We need to use participation and we need to confront the barriers. We need to identify what the barriers are going to be in our particular workplaces to the change in why we need to manage MSD risk management. And then I've shown you our approach here at Latrobe University that we've developed to address these ‑ the need for a change in risk management.

If you're interested in learning more, we are running workshops. We hope to be in Brisbane on Wednesday, 16 June, and then there is other dates. And if you go to our website register for the mailing list you will be able to find out when those workshops are on. But we hope to see you at one of those in due course. And if you want to work with us we have a number of different opportunities. Just get in contact with us.

            Thank you for listening. I really appreciate that and I'm very happy to take any questions. Thank you.

**MADONNA KING:** And thank you, Jodi. That website again, www.aphirm.org.au. I love that call to action, Jodi, of change our thinking to navigate tricky and complex times and issues.

            A question from Nicole. Given that our theme is safety by design, how do you see that fitting in for MSD prevention?

**JODI OAKMAN:** I think it's really critical. As Sarah highlighted before, I think the issue is that we really need to think about design at all levels and think about work rather than tasks. So really taking into account all the things that influence how people are working and the job designs is an integral part of that. So I really think it's a critical piece in changing that way of our current approach.

**MADONNA KING:** Thank you. Another question. If you had to nominate two or three things a workplace should focus on to improve their prevention of MSDs what would they be?

**JODI OAKMAN:** Now, I really focus on getting their supervisors and managers on board and educating them on the sort of complex aetiology of musculoskeletal disorders and use their language. So where they are at that particular point in time, and shift them along that paradigm to get away from that sort of linear hazard dose response relationship.

**MADONNA KING:** Thank you, Jodi. There is another question. And thank you for your questions, keep bringing them in. You can log them in our live chat area on the right‑hand side of the screen. Jodi, there are so many manual handling training programs and posters that tell us how to safely lift, what's your advice around this?

**JODI OAKMAN:** The evidence says that they don't work. So given that I'm talking about evidence, I really have to say that they don't work. So use your time with people to educate them about hazards identification and that education around the supervisor piece. I think that's really important. You will get better bang –

**MADONNA KING:** Thank you. Better bang for your buck. And a final question, research is available, the point you made, and Professor Sharples made it too, but is not always shared. That information is not always shared in a workplace. How do we prioritise or influence that?

**JODI OAKMAN:** That's a tricky, big question in 10 seconds or ‑ many of us are really trying to push information, research evidence out in ways that can be accessed by practitioners through open access, I think. Sorry to the lots of people here, I think the onus is on us as professionals to remain ‑ keep our education, our PD up to speed so that we are actually really using evidence‑based approaches. Because we are really that link, with my practitioner hat, we are the link between the research and workplaces, and I think there's a big onus on us as professionals to really embrace using evidence and keep up to date.

**MADONNA KING:** Thank you, Jodi. We really appreciate your time today. Just wonderful. And, you know, safety by design is our theme, but today we have been focusing on building workplace capability in terms of building the evidence base. And that's exactly what you've done in your presentation. That's Associate Professor Jodi Oakman from the Centre of Ergonomics and Human Factors at Latrobe University.

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