Dr. Pat Camp (00:00):

Welcome to LungFIT, the pulmonary rehabilitation podcast, which is dedicated to topics related to the practice and research of pulmonary rehab. I'm your host, Dr. Pat Camp. I'm a physiotherapist and researcher at the University of British Columbia in Vancouver, Canada.

Welcome to this episode of LungFIT pulmonary rehab podcast. On today's episode, we're having something a bit different. In my research laboratory, which is called the UBC Pulmonary Rehabilitation Research Laboratory. The graduate students meet once per month to discuss a research article chosen by them, which is relevant to respiratory health. The article they're discussing in this episode was published in 2021 and describes a study on the associations between respiratory symptoms and household environmental factors in two First Nations communities in the province of Saskatchewan in Canada.

You may be wondering about the connection between an article like this and pulmonary rehab. It's actually quite relevant to us for many reasons. First Canada as a country is going through a reckoning regarding the damaging legacy and the ongoing impacts of colonialism against the Indigenous peoples of Canada and the importance of collaborative research and clinical practice to improve Indigenous people's health outcomes. And so this is happening nationally -- although very slowly -- with government organizations, but it's also happening more personally with healthcare professionals starting to enroll in cultural safety training, and universities working hard to enroll more Indigenous students in healthcare programs. As a healthcare professional, working in pulmonary rehab, it's important to have a broad awareness of the various risks to lung health that your participants may face. Although cigarette smoking remains a primary risk factor for chronic lung disease, other exposures for symptoms and disease do exist and are very common in many communities. Household related risk factors for respiratory conditions and symptoms are not evenly distributed in society.

And so having an understanding of these factors which may contribute to disease and to respiratory symptoms is important as healthcare professionals working in pulmonary rehab. And it's also important to see how a collaborative research project with researchers in universities and First Nation communities working in partnership together to create a health research study that's of importance to a First Nations community. That's also important thing for us to understand. So I thought it would be interesting for you to listen in on their journal club. If you're interested in journal clubs, we do have an episode dedicated towards starting and sustaining a journal club of your own. So I'll link to that in the show notes, but without further ado, here's my students' recorded conversation from their July, 2021 journal club meeting.

Justin Turner (03:18):

Hello there podcast listeners. This is the journal club of Dr. Camp's pulmonary rehab research lab. We meet once a month, the different trainees in the lab and discuss an article each time. And there's one student who is delegated to be the leader. And this week the leader is me. So my name is Justin Turner and I'm recording today on the unceded and traditional territory of the Musqueam, Tsleil-Waututh, and Squamish Nations in Vancouver, Canada. Before kind of delving into our article, we'll just each of us give an introduction to ourselves. So I'm a PhD student at the University of British Columbia supervised by Dr. Camp. My background is in occupational therapy, I'm a registered OT, and I'm also an Indigenous Canadian myself. I'm of Red River Métis descent. And I think for that reason, I really excited to talk about this article in particular. And so maybe next we'll get Débora and then Paulina, then Ivan to introduce themselves.

Débora Petry-Moecke (04:32):

My name is Débora. I am a physiotherapist and I'm also a first year PhD student in Rehabilitation Sciences at UBC. I'm a physiotherapist and I'm from Brazil. I'm really excited to be joining you today from Brazil to discuss a little bit more about this paper.

Polina Petlitsyna (04:50):

Thanks, Débora. Hi everyone. And my name is Paulina. I am working in the Camp lab this summer and I'm a third year biology student.

Ivan Kamurasi (05:00):

My name is Ivan. I am currently a graduate student doing the Master's in Experimental Medicine at UBC. I'm supervised by Dr. Pat Camp. And I'm excited to be part of this journal club to discuss this article. So welcome everyone.

Justin Turner (05:19):

Yeah, and I'm just really excited, just, you know, this lab and the different trainees, we have such different backgrounds and different kinds of expertise and life experiences. So it tends to make for quite rich discussions during the journal club. And so what we are going to do is give a brief summary of the article that we're discussing today, followed by a discussion of some of its strengths limitations, and of course, implications for pulmonary rehabilitation. And so what is this article that we're talking about today? It's a research article published in April of 2021 in the International Journal of Environmental Research and Public Health. In the article, the authors report, a study that aimed to evaluate the associations between household environmental factors and respiratory symptoms in adults from two First Nations communities. And these communities were located in the Canadian province of Saskatchewan in this study. They don't name exactly which communities they were, but we knew that they are two First Nations reserves in Saskatchewan and the research team and coauthors are a group of clinicians and health researchers at the University of Saskatchewan plus leaders and members of the two participating First Nations. And what is their methodology? So they collected data through questionnaires that were administered door to door in person within the communities. And they also collected dust samples from each participating home. In the questionnaires the participants self-reported whether they experienced shortness of breath or wheezing during certain activities like going for a walk or getting dressed. And they also asked participants about their home environment, including whether they had ever smelled mold and whether there's smoking that took place in the home and how many people participated. So a total of 131 homes were surveyed and had dust collected and 293 individuals completed the questionnaires. So in some homes, there was more than one person who did the questionnaire. So just to summarize things, the researchers looked at the associations between self-reported respiratory symptoms and the household environmental factors, and to analyze all this data, they did both univariate and multivariate statistical analyses to test the associations between respiratory symptoms and housing factors. Significance was at 0.05 and they reported odds ratios and confidence intervals. So my first question to get everything going for us is what findings stood out to you.

Débora Petry-Moecke (08:09):

Thank you, Justin. I can start talking about it. So some of the findings that stood out for me were the fact that the rates of respiratory symptoms were much higher compared with the provincial rates. The second thing was that this study population's non-traditional use of tobacco was seven times higher than the provincial average and is significantly higher than 2017 provincial average of 17.8%. And others

also highlighted smoking as a risk factor to shortness of breath. And the other thing is that the findings revealed that 59% of houses had signs of water dampness in the last 12 months, and this dampness was associated with twice the risk of ever-wheeze. And finally, the fact that the findings also reveal that 48% of the houses reported smell of mold and almost 35% of the houses always had a mold smell. And always having a mold smell in the house was associated with twice the risk of ever-wheeze. So we can see the strong association between these housing conditions, poor outcomes with respiratory symptoms in this population.

Justin Turner (09:25):

Yeah. It really stood out to me too, that the prevalence of shortness of breath was quite high within the study population. And indeed they did find there was a link between those symptoms and the in home environment. So Paulina, I'm curious, when you read through this article, what stood out to you the first time around?

Polina Petlitsyna (09:47):

Yeah, not to spill over into the strengths of the article, but I did see the involvement with the two communities when it came to gathering, you know, the information using the questionnaires. I thought that was really relevant to what we do here at the Camp Lab.

Justin Turner (10:07):

I think that's a good point to highlight is the authors talked about how this study actually was co-developed by community members. And it seems like this research was actually asked by them, this is something that they wanted to do. So that really was a strength and something that stood out to me as well. I'm curious Ivan what you thought about the study's findings with respect to mold and dampness.

Ivan Kamurasi (10:36):

I think if someone just to getting to the point of mold, the smell, we can see them. This was self-reported. So we could be in bias that people are self reporting more this smell. And the question that comes into mind is how do you, well, I wouldn't say that, how do you smell mold. Because if one is smelling mold then it's very probable that they are smelling spores of molds, which is really, really dangerous. But on the other hand, is that they could smell the rotting of the wood, which does not necessarily mean that the wood is moldy because dampness can make the wood get rotten without having mold underneath. So maybe they could, I don't know what would be the right term, but it could have been an association like associating that rotting of the wood, with mold smell. Because if somebody is smelling mold than definitely, they are inhaling the spores, which in turn is, is dangerous. And we can see that people that reported there was always a mold, the smell in the household, how they association and the association was twice the risk of ever having. So meaning that people that reported that the house had mold, the smell had twice the risk of developing wheeze. So it's kind of interesting. And it stood out to me in this article. Thank you.

Polina Petlitsyna (11:58):

So you would say it was a more subjective approach to assessing moldy smell.

Ivan Kamurasi (12:04):

Yeah. Something, something like that, for sure. I mean, I know for sure, we're going to get into more depth into that, but if there was better ways of assessing the mold in the household, rather than self-

report, it would have been much better because I can see that there was a little bit of a bias, because if you say a moldy smell, if somebody sees a wood that is rotting because of maybe dampness, this is things like that, it will say that it's a moldy smell. You know, if it, if it's something else, but if, you know, when you get into a building and if it wood is damp, you can smell the smell of the wood that it's rotting, but it's not actual mold. When you actually maybe give a smell of mold spores, that means it's in the air. So, which is a little bit different. And if you're inhaling the spores for all of your life, then that means you at a greater risk for respiratory diseases.

Débora Petry-Moecke (13:01):

Thank you, Ivan. And do you think, is there a better way to assess this? Do you have any thoughts around this?

Ivan Kamurasi (13:08):

Yes. So one of the best measures is to use the qualitative measures, like the Elisa testing. So we get the dust samples in the households, we sample them and we analyze them in the lab and to find out if actually there are mold antigens in the house, rather than saying that we are smelling the mold. And if you do the analysis of the dust samples, then you find out that they actually inhale antigens. So the mold antigens in the dust samples, then definitely you can tell that that house has, has mold or doesn't have mold.

Justin Turner (13:42):

Yeah, I think maybe this is a nice segue into some of the critiques that we can make about the article. And certainly that seems like a missed opportunity to me. They were collecting dust samples in the house, and yet they didn't test for the actual measure of mold. It was all based on a self-report. And a lot of this study is based on self-report and there's basically some inherent limitations with a self-report study like this, because you don't necessarily know if someone is being completely honest, they might withhold information for whatever reason, Débora, what are some things that you think the researchers could have done differently with this article

Débora Petry-Moecke (14:32):

Thank you Justin. I think one thing that is important to acknowledge is that this is a large-scale study, so they had almost 300 participants. So it would be kind of difficult to collect data to analyze this results in an objective way right inside the lab. So I think this is something important for us to acknowledge. The other thing is that they did an objective measure that was this beta-glucan, but they also said that this was not a good predictor of effect in this population. And so I was wondering why did they choose this particular substance then? Right. And another thing that I was questioning myself about was there was lack of context for this specific substance is being analyzed in this study. So does this something that I would suggest adding on? Um, the other thing is also related what you were saying, Justin, about recall bias because this issue of self-reported data regarding a much earlier period, like dampness was collected in the last 12 months. So you can easily forget something that occured in this period. Yeah. So these are some of the things that stood out to me.

Justin Turner (15:59):

Yeah. I think that that's a good point. And the authors don't go into too much detail about it in this article, but this publication is one output of a much larger study. So it's probably not possible for them to give every single detail about it. And I know from writing research articles myself, and I'm sure all of

us can speak to this is there's a limited word count. And you have to formulate the article to however the journal wants it to be written. So it's definitely impossible to put every single thing in there at the same time. I think you raised some valid critiques.

Débora Petry-Moecke (16:43):

Another thing is that the authors mentioned that data was collected in 2014, but the paper was only published last year. So this is something that's common in research. Many things may have changed. So I think it's something to consider and maybe to highlight in the limitations of the study.

Justin Turner (17:07):

Yeah. Good point.

Ivan Kamurasi (17:09):

I'm thinking maybe also to add on the seasonal changes when it came to dust sample collection, because the seasonal change -- if the samples were collected in the period of the whole year, we know that Canada has four seasons. So I think if there was a line to say that maybe during the fall or maybe the spring, that's when people reported high levels of mold or that's when they smell more mold than the other, these would have been great. Thank you.

Débora Petry-Moecke (17:42):

And just to add one more thing, I think this falls into what Justin was saying regarding the limited word number, but just a suggestion. I think it would be helpful if they have stratified their results by group age, because there is a wide range of age. And the other thing is they could have explored in the discussion also the relationship between body mass index and female sex with respiratory symptoms. So they did found some interesting results around this and they didn't discuss it properly on the discussion section. So I think this is kind of just a suggestion.

Justin Turner (18:23):

I think those are, those are some helpful suggestions, Débora, and sort of going back to your point, Ivan, you know, I myself am from Alberta, which is the neighboring province to Saskatchewan and both provinces are very agricultural places where the amount of dust that's in the air, it really varies depending on what time of year you're in and whether crops are getting harvested. And when they're getting harvested, there's a lot of machinery that's adding dust to the air, same within the spring when, when they're planting crops. So that's sort of, uh, a missing context. Another missing context is that we don't know exactly where in Saskatchewan, these, these two communities are located. We don't know anything about their cultural backgrounds. And I think there's perhaps some really valid reasons to, to withhold that information, but it does leave a lot of missing context at the same time. And this sort of leads into one of the bigger issues that I, I personally have, not just with this article, but with a lot of research articles that are published with respect to Indigenous people's health. And that's the deficit lens that is brought to this discussion. I wonder Débora, if you wanted to speak to that yourself.

Débora Petry-Moecke (19:47):

Yeah. Thank you, Justin. I think it's super important to highlight the fact that in this, in this research, as in many other Indigenous related research, the paper begins by depicting Indigenous communities with a deficit-based lens, for instance, saying higher prevalence of respiratory related health conditions. And also inadequate housing is a significant concern in First Nations communities in Canada. And so these

Western conceptualizations of health reflecting colonialist regimens portrayed Indigenous communities from this deficit based lens while ignoring communities strengths and self-determined perspectives of health and wellbeing. It wasn't long ago that I started to realize how in fact research and practice have largely prioritized attention to Indigenous health deficits in relation to non-Indigenous. And I have been learning the importance of this shift towards strength-based approaches. So emphasizing the protective factors, the resilience of Indigenous peoples and wellbeing it's super important.

Justin Turner (21:02):

I totally agree. It is a fact that unfortunately, many Indigenous communities worldwide, as a result of colonialism and climate change, frankly, do have poor outcomes in a number of different health measures. At the same time these are really beautiful and unique cultures that add to the depth of the human experience. And there's a lot of knowledge and expertise and value that is held within Indigenous cultures. And if we just focus on the negative, then I think that gets lost and it perpetuates a lot of really harmful stereotypes. And that's probably not the intent of researchers working in this space, but it is unfortunately what ends up happening if you only focus on the negative and not positive as well.

Débora Petry-Moecke (21:55):

Yeah, for sure. And the other aspect that I consider important is reflecting on the causes just as you mentioned, Justin, I was questioning myself while reading this paper. Why First Nations have housing issues such as mold and overcrowding and lack of affordability for housing. And so I think this paper and many others they are lacking in the acknowledgement that this is a consequence of colonialism. And I think it's super important to do that. And also related to everything that colonialism implies like the forced removal from their ancestral lands, into isolated places, with scarce resources and also the intergenerational trauma from Residential Schools and also continuous experiences of racism and other barriers to access in all kinds of services, education, health, employment. So I think it's just super important to at least acknowledge that in research.

Justin Turner (23:00):

Yeah, there's a bit of a tension with that at the same time, because if that's the only thing that you talk about, again, it sort of goes back to the deficit lens and there could be some missed, positive, resilient, important aspects of Indigenous communities and cultures. However, if you don't acknowledge that context about colonialism, then someone might read this article and not really understand why, why things are the way that they are.

Polina Petlitsyna (23:31):

Definitely. I think for me, it's about kind of just taking it and extending it to highlight certain issues that we would know living here in Canada and its relationship with the First Nations communities. But it wouldn't be so apparent to someone who's just a first time reader of the journal. And I think just even extending, like you said, with the kind of the positive lens, seeing how, you know, this research can be used in a positive way through its implications, I was wondering if anyone could speak to what they think this article would benefit with regards to its implications.

Ivan Kamurasi (24:09):

Thank you, Paulina. I think this article paves the way for more and more research, like it acts as the basis, you know, for other people to go and do kind of similar research, but with more quantitative

methods that will actually yield good results, not results that will be subject to bias. And then, uh, if these associations are found, then something like a knowledge translation needs to be formulated more, more resources, need to be given to communities. These things need to be addressed. And so that, uh, the lives of members of these communities can be improved in one way or the other. But most importantly, I think doing more quantitative research that, or that will yield results that won't be subjected to bias would be actually a great idea

Débora Petry-Moecke (25:04):

Yeah. Thanks Ivan. And just adding on what you were just saying. I think this is a positive aspect of having the strong community participation, you know, like the fact that the participants were invited to participate and co-develop and manage the study. I think this is important because it really increases the likelihood that results will be translated into actions, which benefit the community being studied. And I think this is super important thinking about future research also. And another thing that I think all of us can agree is that is kind of missing in, in the end of the paper, some plans or strategies moving forward from these data. Because we recognize that this is not the objective of this particular study and that it could probably be the subject of another paper, a separate one, but I think I missed the authors, given some directions for future studies, which go beyond the need to improve housing conditions.

Ivan Kamurasi (26:11):

I agree Débora, yeah. I think the paper missed that, and it's always good to always put the suggestions for other researchers that will do kind of like a similar research or like the future research that will come after that one so that there is a clear direction if there is something that was missed out, you know, so that, that will be great for sure. Thank you.

Justin Turner (26:33):

And I think to close out this part of the discussion Indigenous researchers like Linda Tuhiwai Smith research, Indigenous research. So they're researchers about research. They discuss often how, how the word research is actually like it's a dirty word. It's not a good word for many Indigenous communities due to the history of really extractive colonial research practices, where a team of people from a university, they come into a community, they collect data to advance their careers, and then there's no actual benefit to the community in the end. And in some cases, traditional knowledge is stolen. Like the researchers haven't been given the right to disseminate these findings, these results, traditional knowledge. So, you know, it, it definitely is a strength of this article that it was developed by the community and hopefully by doing so that means that the results can be used by the communities themselves. So Débora you were mentioning about the fact this article doesn't give too many cues in terms of implications for future researchers, for how they could look at this article and figure out what kind of research they want to do. How about for pulmonary rehabilitation? What are some takeaways that pulmonary rehabilitation, clinicians and researchers could draw from this article?

Débora Petry-Moecke (28:06):

Well, so I think that knowing that from these findings, that the rates of respiratory symptoms that were much higher compared with the general provincial rates and also that the study's population non-traditional use of tobacco was almost four times bigger. And that almost 50% of houses had signs of dampness in the last 12 months. And also that almost 35% of the houses always had moldy smell. And I think this indicates that these individuals have much greater risk of developing respiratory illnesses as a consequence of inadequate housing factors and probably will need to attend pulmonary rehab in the

future. And on the top of all that commonly First Nations communities belong to rural and remote locations, with lack of access to quality and culturally relevant healthcare services. So it is crucial to address health and housing inadequacies in First Nations communities, but it's also super important to improve their access to healthcare services in general, but also to rehabilitation services because they would definitely benefit from it.

Justin Turner (29:24):

Yeah. I take your point Débora about increasing the access to health care specifically in this instance, pulmonary rehabilitation. One of my takeaways though, is that when the environmental factors present in, in your home and in your community are not conducive to a healthy wellbeing, all the pulmonary rehabilitation in the world, it's only going to help you so much. So there's some downstream social determinants of health that we have to also address that are perhaps even more important. And for pulmonary rehab clinicians, I think this study is a reminder that we need to capture an accurate background of our clients and where they live and having an understanding of their culture and their community and their home environment

Polina Petlitsyna (30:11):

Well said, Justin.

Justin Turner (30:13):

Thanks, Paulina. I know that you are not a clinician yourself, but were there any implications that you read into for this article that medical professionals and pulmonary rehab professionals in particular should glean?

Polina Petlitsyna (30:28):

I just remembered a point as we were talking about doing potentially a “five years down the line, checking in” article with the same two communities provided that some housing help was given, some sort of renovations have been planned throughout those five years, and then coming in and checking in with those same groups and seeing if that made any difference to their current housing conditions and as a result, their risk of having respiratory illnesses.

Justin Turner (30:59):

Yeah, I think that's a good point. While longitudinal research is tough to do it is expensive and you have to maintain relationships with communities over a long time, which takes a lot of time and effort and people power, but it could be really beneficial to do a follow-up study like that. I totally agree with you.

Polina Petlitsyna (31:20):

And the reason I say it is because, you know, these communities expressed great interest in doing these questionnaires and taking part in this research. So, so I think it would be really beneficial and I think they would still show interest in giving some great information to the research team of clinicians that were working on this topic.

Justin Turner (31:42):

Yeah, I definitely think so too. Ivan, I'm curious for you, if there were some implications built into this research that clinicians ought to keep in mind.

Ivan Kamurasi (31:55):

Thank you Justin. I think most of them were already highlighted them during, during our conversation and our discussion of this article. I think, since the community was involved, it's a great milestone. So like Paulina said follow up study will be, will be awesome. I totally agree when it comes to five years after like 10 years to see if change after publication of this study, government, NGOs, non governmental organizations, something like that, if they came to , if there was a knowledge translation or if there was a change that took place and actually do kind of like a similar study to see actually if this, there is respiratory symptoms or if the community's still experienced high levels, or if they're still in their households also to see if there was a change that took place, when the houses renovated, why health centers in the communities or recruiting or more health workers into these communities encouraged. Because I know for sure in some communities, like if you are a health worker even go to work in communities, you're given some incentives so seeing something like that to be will be encouraging will be great for sure.

Justin Turner (33:21):

Yeah. Ivan you, you raise a really good point. How do we get more health services? How do we get more rehabilitation services to rural and remote communities and, and to First Nations communities? I think one of the most important ways to combat the chronic shortage of health professionals within rural and remote and First Nations communities is to actually recruit professionals who are from those communities. And I know that myself, I'm, I'm the minority. There, there aren't that many Indigenous health professionals or Indigenous physiotherapists, respiratory therapists, occupational therapists. So if we recruit more Indigenous people with it, into our professions, then I think we'll be more likely to stay in our communities and know exactly how to serve our communities and what our needs are. So I think that that is a really important place for, for policymakers and for schools to think about. What, is there anything else we didn't touch on quite yet?

Débora Petry-Moecke (34:32):

Yeah, so currently Indigenous people are underrepresented in the physical rehabilitation workforce and in physical therapy education programs. And so it's important that the physical rehabilitation workforce match the needs in Indigenous communities. This involves increasing the number of Indigenous physical rehabilitation professionals, or in allied roles to support them the existent physical rehabilitation workforce with cultural safety training too. So I think one of the things that I was thinking about is that a comprehensive pipeline is necessary to support Indigenous students at pre-entry, transitioning to tertiary studies, complementing tertiary qualification and postgraduate development. So I think support for students to transition into and within a health professional programs, includes bridging foundation programs, admission policies, quotas, and institutional mission statements demonstrating a commitment to achieve equity. So I think this is something super important because Indigenous people sometimes they are, most of the times they are underrepresented not only in healthcare services, but in several places. So I think this is super important.

Justin Turner (35:59):

Yeah, that's really well said, Débora, and just kind of going back to, to some strengths of this article, I have to commend them on their community based approach. And the fact that one of the coauthors is actually a community member himself and they involve research assistants who were community members who carried out this study. So I think that that is an example of the skill building and capacity building you're alluding to, but there's more work to be done for sure. So I think that that was a really

great discussion everyone. To summarize again, this is an article published in 2021 in the International Journal of Environmental Research and Public Health. And in the study, they looked at the associations between respiratory symptoms and environmental factors in the home and found that indeed there were significant associations between mold and smoking in the home and things like shortness of breath and wheezing. There's a lot of strengths within the researchers' methodology and some areas that they could have delved a little bit deeper into within, within this manuscript regarding social determinants of health implications. And what next, what are the next steps now that they have this information? So, yeah. Paulina, do you want to do the honor of closing out this podcast episode?

Polina Petlitsyna (37:31):

Sure thing, thank you everyone -- Ivan, Justin, Débora and the listeners for listening into our discussion today -- definitely covered a lot of ground. So do check in with us next time we discuss a different article. Thank you.

Ivan Kamurasi (37:51):

And just to add before we close, get into the comments section. Please give us your thoughts. What do you think? Any suggestions that you have and any comments that all will come under, we'll be addressing them in the next episodes. So thank you once again.

Dr. Pat Camp (38:08):

I hope you enjoyed this episode. Links to the paper are in the show notes. In addition, as I said, if you're interested in creating a journal club of your own, I invite you to listen to the LungFit episode on creating a journal club. I'll link to that episode in the show notes as well until next time stay well, everyone. Bye for now.

Dr. Pat Camp (38:34):

Thanks for listening to LungFit. Show notes and transcripts can be found on our webpage at lungfit.med.ubc.ca. If you found this episode interesting and helpful, please consider reviewing the show on iTunes and tell your friends and colleagues. If you want to suggest a topic for a show, please leave a comment on our web page. Thanks for listening.