And we're ready to go.
So thank you, everybody, for attending our second StatsChat Live!
This Is a New Format That We're Trying to Help You with Learning More About Statistics.
So rather than providing you with a lecture on a specific content rare, the goal is really to give you ample opportunity to ask questions.
This year every month we're going to provide a skill builder session followed by a monthly StatsChat.
Each month we're going to have a new guest, which will include our tutors, even some faculty and some staff -- staff.
My name is Pat Dunn and I'm an instructional support specialist in the Academic Skills Center.
And tonight I'm joined by Kim and Dr. Matt Jones.
Kim actually coordinates our tutoring and activities and a lot of the stuff that we do in the Academic Skills Center.
And when we're done with the Q&A, I'm going to ask Kim to speak a little bit more about the -- some of the services that we provide.
Pal her mow.
And you're special guest tonight is Dr. Matt Jones.
and Dr. Jones works in the Center for Research Quality.
So welcome, Dr. Jones.
>> Dr. Jones: Thanks, Pat and Kim.
I'm really excited to be here.
>> Dr. Dunn: and can you tell us a little bit more about the Center for Research Quality?
>> Dr. Jones: Well, center for research quality, as its name implies, you would guess oversees the quality of student research projects.

But we also serve as real support mechanism not only to students but also to the faculty as well.

So, for those of you who are at various stages of your capstones or might have completed your capstones and have seen, of course, the rubrics and the checklists and arranged your various defenses, those are -- those all go through the Center for Research Quality.

But what I want to emphasize here this evening is, again, that we do have a significant support component that is available to, again, not only students but also faculty as well.

Palermo-Kielb.

That's the short speaks piece of it, capital Pat.

>> Dr. Dunn: I'm sure there's much more beyond that.

I know you're also a researcher yourself.

Can you tell us a little bit about some of the research that you've been involved in.

>> Dr. Jones: Yeah, so, my primary emphasis, I'm a methodologist in center for research quality.

Widely trained.

But my interests sort of go a little bit more towards the quantitative side, so I tend to take the quantitative methodology questions and teach those classes.

Initially when I was first training to be a researcher, my interests were in
organizational theory and specifically on structures of organizations and how -- trying to explain why organizations structure themselves in a particular way. How come they end up being really tall, bureaucratic, really flat, overly policy-laden, innovative, those sorts of pieces. So that's actually what I did my dissertation on. And then sort of soon after, as part of that, using those same theoretical frameworks that I was exploring, really got into the adoption of technology in public agencies and specifically looking at social media in public agencies. These days I tend to focus just a little bit more on performing and reading research about research methods. Which might sound utterly boring to some people, but it's utterly fascinating to me. >> Dr. Dunn: Well, somebody has to do it, right? >> Dr. Jones: That's right. That's right. So I'm always interested in the progression of quantitative methods and, you know, it's not a static field by any means, so seeing what's new, explaining differences of how things were done in the past and how we're doing them now and I guess what's really interesting to me, specifically, is we're collecting more and more data, which is great if you're a researcher, and how to deal with this data. I think everybody's probably heard the buzz term, quote, unquote, big data.
Dr. Dunn: Right. So you mentioned quantitative, which is that's where -- why most of us here with statistics.

So what types of statistical tests have you used in that research?

Dr. Jones: Well, I've used all sorts, but, really, you know, the go-to and what's been described as the work horse of social science is just ordinary linear squares regression, ordinary least squares regression, excuse me. You know, certainly a very powerful tool if you understand all of the associated weaknesses it has.

Nothing's perfect. But that's really kind of been my go-to just because it seems to fit so many of the questions that I want to answer.

Dr. Dunn: Well, great. So the format tonight, we're going to use this as an open Q&A session, so for those of you listening in, what we'd like you to do is actually post your questions in the Q&A pod. You can also communicate with Kim through the chat pod. So try to keep the Q&A for questions, and we're going to monitor those questions.

We probably won't be able to go to every question, and there's going to be some types of questions that really are better suited for individual tutoring. But, you know, some of them we'll try to get to in the session tonight. The topics that were listed for tonight actually were on variables. Normally we do the stats chat live following the skill builder but this month we actually -- we did a special...
series on logistic regression, so the skill builder was on logistic regression and the skill builder next month is going to be on variables. And, you know, both of those sessions will be posted in our resources section.

But, Matt, I'm glad you mentioned regression because we've actually had several questions already, and they've all been around regression and, frankly, to kind of combine a couple of the questions is, when do they -- if they're using ordinal values, when can they use a linear regression and when are they maybe like the levels too few and they have to resort to other forms of regression?

>> Dr. Jones: Yeah. You know, that's a fantastic question, and I could talk forever about that. And there are a lot of people that go back and forth about what the correct answer is there. Technically speaking, ordinal levels are not appropriate as dependent or independent variables in OLS regression. But that said, big disclaimer, it's become very very common practice to use them.

And simulation studies show us that it really doesn't make a difference whether we use ordinary least squares regression or some other form of regression that accounts for categorical variables. The key really is to make sure that there's some symmetry in your levels of measurement.

So there's sort of that neutral anchor there, an equal distance on each side and equal distance between the values. So the classic example is the liquor...
five point or even a seven-point scale where it's become very commonly accepted.
You probably rarely would receive any questions on using that in an ordinary least squares.
I think the problem, you run into problems when you see some data, perhaps it's a variable where there are -- there are nine attributes to it. Maybe it's something like age as a categorical variable or let's just -- maybe perhaps better to describe it as degrees of happiness.
And there's that last variable, something like -- it's almost infinite. There's equal distance up to that last variable, that value. And then that last value indicates all values above this. So, everybody who's more than happy. And, so, it's hard to have concrete ending point there. So most of the time it is acceptable. You just really have to look at your variables and look for symmetry. There's a lot of literature out there that states that, you know, pretty much anything with four or more levels to it, or attributes, is probably, probably going to be okay in a linear regression or any other test where you're using -- maybe even ANOVA, another test where it requires metric level variables. There are some people that believe you can go a little lower than that, to three attributes. But even at the three or four attribute level, you know, there's plenty of literature that supports it, but also for every piece of literature that
supports it, there's some literature that says you shouldn't do it. But I think in the social sciences it's become common practice. And we haven't seen that much error, again, in the simulation studies. So, in short to answer your question, most of the time it's acceptable using ordinal level regression as long as you make sure there's that equal distance there.

So, some people, you know, if you kind of remember back to your stats class, the nominal ordinal, interval ratio levels of measurements. Some people have suggested adding a new level of measurement, somewhere between ordinal and interval, and that would be the classic five or seven point Likert scale.

>> Dr. Dunn: Now, are you referring to strictly the dependent variable or is this true for both the dependent and the independent variable?

>> Dr. Jones: Yeah, true for both, dependent and independent variable. So, as I always like to characterize that ordinal level variable, if it's strong enough or has enough of a metric or quantitative property where I can just sort of kick it across the line into that interval or ratio level of measurement, then I feel comfortable using it as either/or and also the independent and dependent variable.

>> Dr. Dunn: Okay.

So, for those of you listening in, keep the questions coming.

I'm kind of -- kind of filter the questions to ones that are probably more
easily answered in the large group. If you have specific questions, maybe if you're working on your methods section or even prior to that, you may want to set up a time with an individual tutor just to bounce some ideas off of. That was actually my topic. >> Dr. Jones: Yeah, Pat, just real quick, to add to what you were saying. Can I give also as an additional resource on top of the fabulous ones you mentioned, a quick plug to our open office hours as well. So, for those who don't know this. >> Dr. Dunn: Yeah, absolutely. >> Dr. Jones: for those who don't know, the Center for Research Quality has open office research for students, both quantitative and qualitative, the focus here is on quantitative this evening, but just so you know. And those hours are listed on our website. It's through a very similar platform, same platform as we're using this evening for this StatsChat live! And I'm not sure, let's see here, if I can paste that link, I'll just pace -- I'll just paste a link there in the chat box. But you can go ahead and get to it from the Center for Research Quality home page, looking specifically under research resources and you'll see a monthly calendar. Thanks, Pat. And those sorts of questions that you just asked, Pat, are great to show up with. You don't have to stay the full hour. You can drop in, ask your question and
then leave.

>> Dr. Dunn: Excellent.

Yeah.

The topic I was going to talk about with the skill builder, which I will, it's actually going to be March 15th is on variables.

And I think that's related to that, too. Some people -- I've noticed this with some of the dissertation students that I've tutored, and they come and they have, you know, they have categorical or ordinal values, you know, and they're wanting to do, you know, linear regression.

I've even seen this with even like ANOVAs and t-Tests where they come and they just don't have the right variable types, you know.

And I just can't stress enough how important it is to be thinking of that, you know, not only when you're writing your chapter 3, your methods section, but even before that, just making sure that when you're collecting your data that the data's going to be collected or if you're using the secondary source, that you're going to have access to variables that you can use in your statistical analysis.

You know, if you're wanting to do, say, ANOVA and your dependent variable is a categorical variable, then, you know, you just have the wrong test.

And, you know -- so always go back to your research question, but then always go back to what statistical test will best answer that research question.

>> Dr. Jones: Yeah, Pat, that's a really great comment that I'd just like to stress.
Because, you know, I do see that all the time where an incorrect variable is used in more often than not it's a linear regression model.
So you really want to pay attention to those levels of measurement and your variables.
I mean, specifically what I see is typically a categorical variable, a very almost nominal level one that's used, both either as an independent or dependent.
You can use it in regression, of course, as an independent variable or just some extra steps -- there are just some extra steps that you have to take.
and also, you know, while we're talking about variables, if I could just briefly mention to everybody out there, you know, pick your variables, for whatever model that you're building, whether it's ANOVA model or a linear regression model, any of the general linear models, with purpose.
Remember that the more variables you add, the larger your sample's going to need to be to have power.
So, I think sometimes people come into statistics thinking, well, if I can add all these variables, I'm just going to add so much more precision to my model.
>> Dr. Dunn: Right.
>> Dr. Jones: But there's a trade-off there.
It's like perhaps you are, but are you adding variables that you don't need?
And also, even if you are adding precision, that means to detect the effect that you want to detect, to see if it's there, you're going to have to have a lot more -- a larger sample.
So, you know, typically it's a very rough -- of course, you know, we suggest using G power, some sort of power analysis program that's specific to your statistical test, but in linear regression, there's kind of a very rough, and I emphasize that, very rough, rule of 10 to 15 cases, so if your unit of analysis is a person, 10 to 15 people per an independent variable.

>> Dr. Dunn: Yup.
Absolutely.
Okay.
We have a question here, again, going back to the, you know, the linear versus a logistic regression.
The question is about using like a multinomial or multifactoral logistic regression.
I know in some cases, you know, they'll just use a binary, which is like the most versus the least.
Any comments on using -- I know there's like an ordinal and a multinomial.

>> Dr. Jones: As part of the general linear model, part of that linear regression family, there are a whole host of different regression methods.
And for anybody who's poked around in SPSS and just clicked on that regression, linear regression, you can see just from SPSS all the options available.
And there are a bunch more.
On top of that.
But I say, you know, I think you already answered this question earlier, Pat, in saying that it really depends upon your research question.
So, if you're trying to predict or explain an outcome that's binary in
nature, follows some by nominal distribution, then, of course, a binomial logistic regression is going to be your best bet.

If you're doing something that's more -- that's still a categorical dependent variable, you don't think it meets the test, the litmus test to kick it over the line as an interval or ratio level variable U it may be ordinal but the way it's constructed, it's categorical in its nature, but maybe it's something like a multinomial regression method.

So, again, I know everybody's probably sick of us saying this, but it depends on your research question.

>> Dr. Dunn: Absolutely.

>> Dr. Jones: and, of course, how variables are measured.

>> Dr. Dunn: Yup.

We have a question about man oval a. Multiple analysis of variance.

>> Dr. Jones: Will say, just in general, I mean, these are some pretty sophisticated statistical tests.

Still Dr. Dunn.

So also go into these with caution with, you know, is this really the type of analysis I want to be doing? Because if you're going to do something like, you know, multinomial logistic regression or man ova, you're going to have to really learn and understand what these tests are doing.

>> Dr. Jones: Yeah, I mean, you know, manova is part of the general linear model family.

So it has a very close relationship to regression, just as ANOVA does.
But there definitely, as you said, Pat, some differences.
And if you've ever run one, if anybody has ever run one in SPSS, you'll see your output is very different.
It gives you a lot of output.
A lot of different statistics that you've probably never heard about so, you know, it does require some reading.
I shouldn't say it's impossible, you know, if you conceptually understand what a runway in ANOVA does, you can spend some time figuring out what a manova is.
It's sort of a one-way ANOVA on super steroids.
But there's just, of course, nuances to it.

>> Dr. Dunn: Absolutely.
We have a couple questions.
You mentioned G power.
So that provoked a couple of questions about effect sizes.
A lot of the students that I tutor get really hung up and struggle with how to estimate effect sizes.

>> Dr. Jones: So trying to -- if I can understand the question correctly.
So, in G power, you know, it asks you for the effect size.
Is that the question?
You know, what number should I put in there?

>> Dr. Dunn: Yeah.

>> Dr. Jones: Yeah.
So, again, a lot of literature out there on that.
But I think from what most people follow is Cohens' basic guidelines on effect sizes.
Again, they're different.
We can break them down into small, medium and large effect sizes. Or at least Cohen does. And they -- those values really depend upon the specific test you're using, but speaking about multiple regression, often we're looking at effect sizes characterizing small is at .02.

Medium is .15.
And large is .35.

So, when you put that number in there, you know, how much power are you going to need? How large is your sample going to be to have enough power to detect that effect? So, if there's a large effect that's present, you know, smaller sample sizes are going to be able to detect that, just simply because the effect is so large.

So typically, you know, we suggest just, you know, splitting it down the middle to detect a medium effect size, .15.

>> Dr. Dunn: Yup.
>> Dr. Jones: and if you --

>> Dr. Dunn: Also very important, from my perspective, to understand the literature -- go ahead.

>> Dr. Jones: No, go ahead, Pat.
>> Dr. Dunn: No, I was just going to make a comment that it's also really important to understand your literature. You know, so the effect size, you know, is also your estimate of, you know, how much of a difference there's going to be.

So, you shouldn't be going into that blindly either. You should have a good feel, hopefully from the literature, of what that -- of what you're expecting to see.
>> Dr. Jones: Yeah. I mean, that's a great point, Pat. As everyone's doing their literature review for either a capstone or another research project, remember that your literature review is just not part of the content. The theoretical framework and the specific topic. The literature review also consists of that methodological piece, so things around effect sizes.

>> Dr. Dunn: Yeah. And I think that also relates to the validity of the variables and the measurement tools. You should be looking at what other researchers have been doing in this field. If you're coming up with something brand-new and on your own, then you're going to have to be validating that tool. You know, again, the literature, you know, I mean, whatever topic you've selected, you should, you know, really love that topic because you really need to dive into it as deeply as possible. And.

>> Dr. Jones: and if you're looking for specific information, methodological literature on variables, effect sizes, linear regression, be sure and use our fabulous resource that's underutilized here at the Library and that's the sage research methods online database. And that's available through the database drop-down menu on the university Library page. And that has -- the database has access to some, at last count, 700 texts from...
Sage Publications, which is a leading publishing house for research methods and statistics in the social sciences. So, a lot of that great information that you can glean for your review or just to get up to speed on the different method or to understand more about how to interpret your linear regression or even things about how to construct variables. And it's all available to you there. That was Dr. Jones.

>> Dr. Dunn: Had a couple of questions about the independent and dependent variables in a correlation. So, correlation and regression are related. When you're doing a simple correlation, you know, it really doesn't matter which is which. When you jump over to regression, then it does matter which is the dependent and which is the independent variable.

>> Dr. Jones: Right.

>> Dr. Dunn: All right. There was a question just to repeat that resource, the Sage resource that you were mentioning.

>> Dr. Jones: Yeah, Sage Research Methods online.

>> Dr. Dunn: We'll take this as the final question. There was a question about using cross-tabs. So I know in SPSS you can do a key square, for example, using a nonparametric test and you can also use the cross-tabs function to get a Kye square. I need to read the question a little
bit more deeply.
But the question was in relation to
running regression using cross-tabs.

>> Dr. Jones: So, the cross-tabs, you
know, cross-tabs are for truly
categorical variables.

>> Dr. Dunn: Right.

>> Dr. Jones: and the statistics -- you
know, the cost tabs are descriptive,
but -- the cross-tabs are descriptive
but we can perform some nonparametric
tests, as you mentioned, ceat patted,
like the Kye square, crimers V, which is
a correlation for categorical variables.
So it really does go back to the topic
of variables and understanding how
they're measured and what information
you want to glean from looking at these
sets of relationships.

Crimers V.

>> Dr. Dunn: Yup.
All right.

You know, these 30 minutes go by really
fast.

We had feedback that an hour is too
long.

I think sometimes 30 minutes feels like
it's have I short.

But, -- feels like it's very short.

But, again, this was great, Dr. Jones,
really appreciate your expertise.

I want to bring Kim into the
conversation and talk a little bit more
about the resources that we do have
available.

And I'm going to pop over here, the
links as well.

>> Kim: Thanks, Pat.

>> Dr. Dunn: So, Kim, can you talk a
little bit more about the Academic
Skills Center and tutoring and all that good stuff?

>> Kim: Oh, yeah, sure.
Well, this is stats, so, I'll start with the stats area.
So, yes, we have graduate assistant tutors, and we also have a few instructional support specialists, which Pat is one of them.
We also have Dr. Zintway was a graduate assistant and was a peer mentor way back when we started as peer mentors.
and they support students in the areas of dissertation statistics, general statistics, by I don't statistics, -- biostatistics, and I think that's -- well, probably any kind of statistics.
I'm sorry, also Excel and math.
So, if you need any help with any of your courses in those areas, you go to -- Pass ha it on the screen -- pat has it on the screen here.
Walden U.myWonline.com.
And I had entered that earlier in the chat and I'll put that back up again as well.
Can and that's where you can go and register and access the tutor schedules. And we offer tutoring seven days a week from I think some schedules are open 6:00 a.m. 30 11:00 p.m.
I mean, it depends on the time zones, of course.
and for dissertation statistics, we do offer 60-minute tutoring.
And for any other thing, it's 30 minutes.
And our guidelines, we typically -- you can book up to three appointments a week.
And you just -- it's very very simple to
get in there.
I'm going to pop -- this is where you would go to register.
And that's for statistics.
Now, we also have schedules on there for Microsoft Word, Microsoft PowerPoint.
We also have accounting finance tutor on there.
And, again, they're all willing and able to work with you.
They are also Walden students, most of them, or they have graduated from Walden, like Pat has and got their PhDs.
So they're very good at what they do.
So, if anybody has any questions, please feel free to type in the chat and I can get -- any particular questions about that.
Dispuns Dr. Jones mentioned earlier that there's also services through the Center for Research Quality, so you can also -- using virtually the same platform, you can make appointments for that as well.
So we encourage both, you know, whatever seems to meet your needs.
>> Kim: We also have workshops through the ASC for writing for your dissertation.
So I think those are the, like, for proposals and lit reviews.
So, go to our website, just the ASC general, check to see what we have, all the services.
The workshops you have to pay for because they're per credit, but the other services are free.
We have a lot of resources on -- we have a YouTube channel that we archive all our recordings, like our skill
builders that Pat was talking about, the
stats chat live, what we're doing
tonight.
So you can go back and you can look at
those recordings at your leisure.
And we have the PDFs available on our
website.
So you have the presentations, so you
could take time to kind of process what
you were learning and we also have roll
accounts that you can -- for statistics,
statssupport@waldenu.edu is where you
would reach the stats tutors if you
wanted to e-mail them.
So I want to put that in there as well.
>> Dr. Dunn: Yup.
We also dish popped the links for you
box right at the bottom of the screen.
Web links for you.
and you can click on those.
You can link to register for future
skill builders and stats chat lives.
the archives of our recordings, the
link to the tutoring services, and then
finally also a survey to let us know how
we did tonight.
Waldenu.mywwonline.com.
So with that, I think we have completed
our 30 minutes.
>> Kim: Yes, we have.
C not w in the web address.

>> Dr. Dunn: Dr. Jones, any final
comments or thoughts?
>> Dr. Jones: Only that that went by
really fast.
>> Dr. Dunn: Yeah.
>> Dr. Jones: If anybody -- again, if
anybody has other questions, I mean,
there's all sorts of different resources
that Pat mentioned to you, you know,
again, if you want to talk to me more, I'm going to be doing the office hours this upcoming month in March. So I'll be there.

>> Dr. Dunn: Great.

Well, we really appreciate you taking the time and sharing some of your expertise with us. So thank you very much. And thank all of you for link in.

-- for listening in.

>> Kim: Thank you, everybody.

>> Dr. Dunn: Yup.

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