

CDC/MCH EPI 2008 Conference

**Scientific Writing Communicating Research Investigation Effectively
to Expedite Publication, Programming and Policy in Public Health Training II a**

December 8-11, 2008

PAUL Z. SIEGEL: What do you think?

UNKNOWN SPEAKER: ...based on the title (Inaudible)...check itself that actually says (Inaudible)... talking about reliability and then it gives you the kappa that they're telling you, at least what I'm saying, (inaudible)...based on the text and the result as the title or the table but...and then I'm still not sure but that's what they appear to be saying.

PAUL Z. SIEGLER: Anybody agree or disagree...I don't know if you heard in the back...does anybody agree or disagree with that? That it appears to be the same but we're still not sure?

UNKNOWN SPEAKER: I think it's really confusing. I mean...the reliability can be used for lots of different things...(Inaudible)... and then the agreement was like...it was very hard to know how they did the agreement like...was it precisely? Was it in age groups? Like income levels I think 9% agreement and then I guess (Inaudible)... 7% so I am sort of confused.

PAUL Z. SIEGLER: Yeah. I think the table starts raising new questions like for example here agreement is 98 and kappa is .98 so it looks like 98 out of 100 equals .98 out of one. 98 out of 100% equals .98 out of 1.0. And the same thing here. The agreement is 100% that corresponds to 1.0. But now the next line we have 99% agreement and a kappa value of .97 so they begin to diverge and so I think we really just still don't know. So I don't want to belabor it anymore just emphasize...I'm sure the authors know exactly what they're talking about but if you're asking people to read your paper, some people will struggle with it and figure it out, some people will struggle with it and not figure it out. Some people will struggle with it and misunderstand and some people will say this is just not worth the trouble. So let's see that does it for results, wow. That is actually a natural break so let's take a break for five minutes.

Common or similar topics. I'm sorry I'm drawing a blank on why I have that slide there. What's that?

UNKNOWN SPEAKER: You could check all your references?

PAUL Z. SIEGLER: Yeah...yeah I guess that must be...I guess I'm tired...so present and compare the results of and methods used in other studies on the same topic and so this is an example of a paper in the literature and here is a statement where...at the bottom which is in essence the conclusion of the author of that paper. The statement is perhaps the most disturbing finding in the table is that load numbers of impaired driver's on the road are not accompanied by proportionally low numbers compare driver's in

fatal crashes and we talked about how that's not crystal clear when you actually read the paper. So it raises the point when you do the literature review to distinguish between primary references and secondary references. So a primary reference means you find a paper which shows data and you quote data from that study so you're not...interpreting. You're taking information from a previously published study. Secondary references are one step further away. So for example if you were to take this statement and quote it and put it into your paper well it's actually, it's from the original source but it's an interpretation which on careful inspection we know is questionable. So I'm not even sure if this would be called a primary or a secondary reference. But the essence of the distinction is that when you...a primary reference...you're taking information from a paper which is objective, you're not interpreting. Here you are taking an interpretation and you just plug this interpretation into your paper I would call this a secondary reference even though it comes from the original paper.

So secondary references interpret the work of other authors and researchers and comparison of secondary sources with one another at the primary sources allows more balanced viewpoints so it's a good idea in your discussion to include both primary resources...primary sources and secondary sources. And here critical point is that authors should separate fact from opinion. So if I go back for a moment, you could put this quote...you could say...you could even perhaps modify it and say it has been found or you could say Ross Atall found the disturbing...or made the disturbing observation that low numbers of impaired drivers on the road are not accompanied by proportionally low numbers of impaired drivers in fatal crashes so you could paraphrase that and

make it a statement or you could paraphrase that and say Ross Atall concluded that. There's a big difference between stating this as a fact and saying that some other author drew this conclusion. And so that concept is captured in this statement here: separate fact from opinion. So when you're reporting information from other studies try to be clear whether you're reporting a fact or whether you're reporting an opinion. And I gave you the reference there so if you're interested you could look up this paper. There is some other guidance about using references and incorporating them into your papers. So separate fact from opinion. Now here's another statement which comes from that paper on automobile crashes. It says recent fatality research in Scandinavia has shown to an astonished public that the role of alcohol in fatal crashes in northern countries is only marginally less than countries of much higher alcohol consumption. Well, farmer drinking drivers on the road. Now this statement is quoted from that paper that I showed you the table for well astonished public, well who determined that the public was astonished? You know the reference to the role of alcohol in fatal crashes in northern countries is only marginally less than in countries...marginally less than countries with much higher alcohol consumption. Well who drew that conclusion and what are the data that support that conclusion? So be careful. You absolutely could take this quote and just put it in your own paper and state it is a fact. But I think that would not be an accurate representation. I think it's much more accurate if you say so and so reported or so and so claimed and then you give the statement with the reference. That is a clue to the reader that they can look up that reference and what they're going to find is not necessarily data that support this statement definitively but they're going to find the person who made the statement. So you're tracking back one step at a time toward

the original source of the data. So I already told you the answer to this. To me, two is probably going to look at this and wonder, oh, who said that? Not just take it at face value. So back to the dictionary of useful phrases...it has long been known...very often what it means is I didn't look up the original references. So that's a quick run through. Now the first paragraph of the discussion and now into the second paragraph of the discussion where you interpret in the context of the literature so again, present, compare with results of methods used in other studies. And then use this as an opportunity to emphasize strengths of your study, emphasize the strength of your study and what is new and useful. So you will give some objective information. You can say well we did a survey and we used such and such methodology and somebody else did a survey and they used different methodology. Well that's just an objective presentation of two different methodologies but here since this is a discussion and its open you have the license to express your opinion in your own judgment you can make a statement. You can say that although so and so did a certain methodology our methodology provided an opportunity or our methodology and whatever the improvement is you make that statement and you can make it emphatically and you're emphasizing the strength of what you have done. Perfectly okay to do that in the discussion.

Moving on now to a proposed third paragraph for the discussion section state limitations and caveats. It's important to do that because if you don't state the limitations then the chances are very high that one of the reviewers will be aware of those limitations and so if your paper goes to a reviewer who is aware of limitations that you don't talk about then that leaves the reviewer two options. One is this author is unaware of the

limitations of their own study...that will not reflect favorably on the review. The other is and this author is trying to hide something. That also will not reflect favorably on the review. So it's much better to be honest about the limitations and the caveats. And then in the fourth paragraph if appropriate you can make recommendations and the main categories of recommendations are either changes in practice and policy or future studies. Those are the two major categories of recommendations. As I was saying earlier, if you have done a study and the results of your study justify a concrete recommendation I think you should make it. I think your paper is stronger if you make a recommendation that is supported by the data that you present. It doesn't always happen that way. Sometimes you do a study, you may have results that are new but they may not justify any specific action step. Well if that happens then you shouldn't try and stretch, you should not try to go beyond what the data tell you. You should stick with that summary of the results which is probably up above near the beginning of the discussion section and down here you can make your recommendation for future studies. Now if you do that, if you make recommendation for future studies I really want to encourage you to go beyond a simple statement of future studies are recommended. I think that's not helpful. I want to show you an example of something that I think is more helpful...and that's on page 20 of the handout so if you'll flip back to page 20 and if you look at the abstract on the top of page 20 and then look at the conclusions, our data suggests that use of hand held cellular telephones is not associated with the risk of brain cancer but further studies are needed to account for longer induction periods especially for slow growing tumors with uronal features. So there is a recommendation for future studies, but that recommendation includes some very specific information

about the type of study that the authors think would be helpful. I think that's much better than to simply say further study is needed. If you can point the other people in the direction that you think is justified I think that's a contribution. If you're in the world of writing grant applications you can pave the way for your own next application because you can include your own paper as a reference in the literature review of your own grant application and say so and so recommended...well you happen to be the so and so but if it's been published in the peer review literature that lends some level of credibility to the recommendation even if it's your own recommendation. So when you make recommendations for future studies I think it's worthwhile to spend some time really think about what are the limitations of your own study and then what would be that next step that you would go if you had the money yourself what would you do?

So let's see we're mighty close to 5:00 and I think this is a good place to stop. What I'll suggest is tomorrow morning we'll begin with an exercise about writing the discussion section which is the paper on pages 72 and 73. So when we get started tomorrow at 8:00 and unless there is a hurricane or a family emergency I promise to do my best to be here right at 8:00 tomorrow. I'd like you to begin reading...there's an abstract...a couple of paragraphs in the introduction an excerpt from the methods section, an excerpt from the results section and then the full discussion of a published paper and then what I'd like you to do is to read this and then compare the content of the discussion section of this paper to this framework. Just look at it and just make little notes, oh this is similar to the beginning, it begins or it doesn't begin with a summary of the results. There's a statement about the study conclusion, the conclusion is directly

supported by the results or it's not directly supported by the results and go through the discussion section of this paper step by step and try to compare the content of this discussions section with that recommended format. So we can do that starting at 8:00 and take about 15 minutes so by a round of quarter after 8:00 or 20 minutes after 8:00 we'll begin a discussion about that, okay?