

Re: Canadian doctors coming to the US

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From: Herman Rubin (hruhin_at_odds.stat.purdue.edu)

Date: 09/04/04

Date: 4 Sep 2004 17:21:27 -0500

In article <1Lp_c.5860\$V15.3838@newsread2.news.atl.earthlink.net>, George Conklin <nilknoc@earthlink.net> wrote:

> "Herman Rubin" <hruhin@odds.stat.purdue.edu> wrote in message
> news:chd8ce\$4e60@odds.stat.purdue.edu...
>> In article <I2KZc.1615\$V15.1292@newsread2.news.atl.earthlink.net>,
>> George Conklin <nilknoc@earthlink.net> wrote:

>>> "Herman Rubin" <hruhin@odds.stat.purdue.edu> wrote in message
>>> news:ch7bd2\$4eqk@odds.stat.purdue.edu...
>>>> In article <mqEYc.4785\$JT3.18@newsread3.news.atl.earthlink.net>,
>>>> George Conklin <nilknoc@earthlink.net> wrote:

>>>>> "Orac" <orac@mac.com> wrote in message
>>>>> news:orac-EF355F.16333529082004@news4-ge1.srv.hcvlly.cv.net...
>>>>>> In article <cgt8fn\$22fi@odds.stat.purdue.edu>,
>>>>>> hruhin@odds.stat.purdue.edu (Herman Rubin) wrote:

>>>>>>> In article
>>>>>>> <orac-A727DC.21270928082004@news4-ge1.srv.hcvlly.cv.net>,
>>>>>>> Orac <orac@mac.com> wrote:
>>>>>>>> In article <[cgra53\\$4a0m@odds.stat.purdue.edu](mailto:cgra53$4a0m@odds.stat.purdue.edu)>,
>>>>>>>> hruhin@odds.stat.purdue.edu (Herman Rubin) wrote:

>>>>>>>>> In article
>>>>>>>>> <[41309b16\\$0\\$18253\\$79c14f64@nan-newsreader-05.noos.net](mailto:41309b16$0$18253$79c14f64@nan-newsreader-05.noos.net)>,
>>>>>>>>> Lictor <ghostmlNOSPAM-REMOVE@online.fr> wrote:

.....

>>>>> Herman denies that the usual test of statistical significance is a
>>>>> void
>>>>>> test of how effective medicine is. Thus anything the government posts
>>>>>>> would
>>>>>>>> automatically be invalid in his mind. I have never really understood
>>>>>>>>> why
>>>>>>>>> he
>>>>>>>>>> insists that only Bayesian analysis be used, since he has never shown

>> >that

>> >> >the results would be changed if you change the test. Anyway.....

>> >> A test of statistical significance tests whether the
>> >> observations would be "sufficiently unlikely" if the
>> >> null hypothesis is EXACTLY true, and NOTHING else.

>> > Based on this comment, we could never do any medical research since
>all
>> >variables cannot be controlled.

>> This is NOT what I said. One can do research with NO
>> variables controlled; this is what happens in astronomy,
>> meteorology, and economics, for example. To a large
>> extent, it is what is done in ecology and geology. We
>> need to use these techniques in biology (it is, to a
>> small extent) and medicine.

> In UK, for example, social class remains a very strong predictor of
>health, even with nationalized health care. It is in the USA, with
>free-enterprise medicine. It is a crime not to control for the social
>variables (see below for stress). By the way, people high in social class
>have LESS stress, despite their complaints. The same is true in the animal
>world.

So what does that prove? Stress can be of various kinds, and not all kinds are the same. And are people of higher social class genetically the same as those in lower classes? If you think this must be the case, you do not understand probability.

>> > Having said that, self-selection, social class and a whole lot of
>other
>> >variables have fouled medical findings now for many years. They also
>ignore
>> >things like stress, since it is not something a BENCH scientist does.

>> I have seen studies taking into account stress.

> Some do. But my comment came from the latest cross-national heart study.
>The investigators stated what I said, but were very surprised that stress
>was I think #3 in predicting heart attacks. We sure do know that stress
>works in animal models.

Stress is different in humans.

>> >> It does not take into account how effective the
>> >> procedure is under the alternatives, nor the magnitude
>> >> of the effect under the null, and hence does not balance
>> >> the various components of risk. If 50% of the people
>> >> exposed to a disease without treatment died, and 51%
>> >> of 1,000,000 people given a treatment survived, this

>> >> *would be HIGHLY significant.*

>> > *So? People would see from the figures what the effect was and the risk*
>> *>too.*

>> *One can see this from the FULL figures, but NOT from the*
>> *significance levels. It does take calculation; the*
>> *original problem from which the above extremization was*
>> *made was 3 out of 3 versus 7 out of 8. The results were*
>> *approximately that if treatments of this type, if they*
>> *worked, worked more than 90% of the time, take the 3 out of*
>> *3, else the 7 out of 8. The prior information, usually*
>> *involving lots of subjectivity, MUST be used. Even in*
>> *science, statistical theory shows that objectivity is not*
>> *even desirable, in that there are better non-objective*
>> *procedures than the best objective ones.*

> *A very unclear statement Herman. I saw one study which claimed 'massively*
>*significant' results when the advantage was 3 months in 9 years. Is that*
>*what you mean? Significant but unimportant at the individual level? (I'm*
>*trying Herman.....)*

This is exactly what I mean. Such a result can be massively statistically significant; statistical significance does not in any way measure the strength of the effect. It merely measures how odd the effect would be if nothing was happening.

>> >*If there was a new*
>> >> *treatment given to 4, and they all survived, this*
>> >> *would not meet the customary significance level.*
>> >> *Which treatment would YOU choose?*

>> > *False choice too Herman. Today we are wondering if common treatments*
>> >*might make things worse, like HRT.*

>> *And for complications like the ones occurring with HRT,*
>> *it can take years to accumulate enough data. What do*
>> *you do in the many years for this to happen?*

> *Why should it? If self-selection were controlled for from the start, we*
>*would not have subjected women to years of harm. My wife asked her*
>*cardiologist about the HRT studies...and she (the cardiologist) used to do*
>*family medicine too. When women really asked her, she told them NO to HRT,*
>*but other physicians (mostly ob/gyns) were pushing it.*

How are you going to control for self-selection from the start? It can only be controlled for in clinical trials, and even there, not everything can be controlled. The studies which found bad effects from HRT were not free from self-selection, either.

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>> *In medicine, we are concerned with decision making under
>> uncertainty. We have to balance the components of risk;
>> this is prior Bayesian behavior. One way to do it is
>> to look at the posterior distributions, but it is not
>> always possible to reasonably approximate this, even
>> when one can approximate prior Bayes risk well.*

> *No technique of analysis will overcome self-selection Herman. Crap in,
>crap out.*

If you include the variables which produce the self-selection, analysis can handle it; it will not be the simple analysis taught in statistical methods courses, and will require careful use of computers. Anyhow, something has to be done, and at least in principle, Bayesian analysis can handle such things as self-selection by including them. In practice, the models have been too difficult so far, with the worst part being input from physicians.

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This address is for information only. I do not claim that these views are those of the Statistics Department or of Purdue University.
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