

It is an honour to open this debate and to support the motion. I will mount a number of arguments to show there's no link between religion and mental health that is not readily explained by straightforward factors such as social support and healthier lifestyles.

Argument 1: the vast bulk of research into religion and mental health that Harold has so well summarised over the years is cross-sectional in nature. *It suggests correlation - not causation.* It cannot show whether religious beliefs and practice are a consequence or a cause of better mental health.

Argument 2: the solution to this *correlation versus causation* difficulty seems obvious. Let's do longitudinal research. If A comes before B then there's a better chance that A causes B. But listen carefully! The trouble is that we only get half way there. We can only conclude that *B has probably not caused A* – namely we can only rule out reverse causation. But we still can't conclude that A has caused B unless we take into account *all other possible explanations.* Not only those we have thought of but also *all those we have not* – the so-called *unknown unknowns.* These other explanations are called confounders. For example, it was once thought that alcohol caused oesophageal cancer – that is, until smoking was taken into account. Then, the real association became clear. Most heavy drinkers smoke! This is the major challenge in research. It is why you hear one day that coffee is good for you, and the next that it leads to an early death - and the next that it is good for you again. I wake up most mornings to hear news of some study like that. But even BBC interviewers are now alert to correlation versus causation!

One of the most subtle forms of this phenomenon is *genetic confounding.* Let's take one example: selective education in Britain seems to produce better academic results. That is until genetic variation is taken into account. Polygenetic inheritance seems to explain only about 9% of the variation in educational attainment. But when we look closer, we find that kids selected for the good schools are *three times more likely to be in the top band on this polygenetic score.* In other words, the form of education is largely irrelevant. This issue of confounding hampers all religion and spirituality research. *By its very nature, it is hard to avoid.* What say a religious or spiritual attitude is determined in part genetically? Some say it might be. And then let's also hypothesise that this same genetic profile codes for happiness or resilience in the face of stress. You can see where this is heading.... So - what to do?

We could make our prospective studies more rigorous and more attuned to confounding - and thankfully that has happened to an extent. However even the well-adjusted studies show that the impact of beliefs and practice on mental health is meagre. In well conducted systematic reviews, the average correlation between religion and spirituality (variously defined) and mental health ranges around 0.2 or lower. This means that religion and spirituality *explain at most about 4% of mental health outcomes* – something you might regard as *trivial*.

Advocates of the view that religion is good for mental health suggest we are just muddling up populations. It may be the case (particularly in European populations) that mental crises move secular people to be more spiritual and religious - and that this might mask a protective effect of belief for the securely religious. Aradhna Kaushal, a delegate who has a poster here at the congress from UCL, has just analysed a large UK birth (1946) cohort carefully followed until age 70 and which included repeated measures of religious observance and mental health. Her analysis showed that mental distress *leads* to religious attendance while religious attendance does NOT lead to better mental health.

How might this matter of confounding apply to biological studies, for example, the recent claims about telomere length? Telomeres are part of the chromosome and their diminishing length with age is linked to poorer health outcomes and reduced longevity. But, once again, reviews reveal that there is little direct impact of religious observance on telomere length that is not mediated through other factors such as cigarette smoking. When it comes to brain imaging it is no better. Two investigators (van Elk and Aleman) have recently summed up the critique of their own field: to quote: “many studies suffer from methodological problems such as extremely small sample sizes, lack of an appropriate control condition, fuzzy measures of religiosity and spirituality and indirect measures of neuropsychological functioning that strongly limit the conclusions that can be drawn....” Need I say more?

Argument 3: when we suspect lots of confounding, we need experiments. Only randomised experiments can demonstrate causation and that is why they are held in such high regard. But how on earth can experimentation help us here? We can't randomise people to hold particular beliefs! But - we can conduct trials of *therapies that take serious account of patients' beliefs*. Surely that would give us a hint? Well, a recent systematic review of all trials of the effectiveness of broadly spiritual (not necessarily religious) therapies found

small effects in anxiety but none in depression. Most were under-powered (all but one had sample sizes of 55 or fewer) and few were tied to any specific religion. Thus Harold and I examined the effectiveness of religiously based CBT versus standard CBT in which over 70 people were randomised. Still relatively small – but rigorously conducted. We found no significant extra benefit at all for the religious psychotherapy.

Argument 4: definition. It's **hard** to define religious belief and practice, or spiritual belief. That's why there are so many instruments out there. Although a core group of 2 or 3 instruments are often used, this may be because they're easy to apply and are reliable.

But reliability doesn't mean validity. A measure can do the same thing faithfully over and over – and yet be completely invalid! Harold and I once made a heroic attempt to come up with a clear definition of 'spirituality' for the purposes of research. Although we published our thoughts, I think he would agree with me that it was pretty much a failed endeavour.

There is also the problem of defining the outcome. Much of this research *muddles up mental health and well-being*. These are not the same – in fact, they are orthogonal. People with no mental disorder whatsoever can have low well-being while people with schizophrenia can experience normal or high levels of well-being.

Argument 5: the investigators' own beliefs: I won't dwell on this argument for too long as I believe scientists should be able to separate their beliefs or convictions from their work. But it is striking how often academics in this field have enthusiastic religious convictions. Thus, we need to be extra vigilant about investigator bias.

Argument 6: my 6th argument is about theological coherence. We don't only seek causation - we wish to know *the how of it* – the mechanics of how A causes B. However, it is obvious to all of us (theologian or not) that religious belief and practice do not protect us from the world. We have known this since the psychologist Frances Galton first pointed out that the Royal Family in Britain were not particularly healthy, despite being prayed for in churches every week. We also know that people in societies with very high religious observance are no less prone to mental illness than those in other more secular states. Depression touches the religious and the non-religious alike.

Take the lives of the saints. Many went through mental crises and appeared to be far from 'mentally healthy'. 'Take up your cross' doesn't hold any promise of well-being. In fact it makes well-being seem trivial. *Perhaps the meaning of life is about something else.* Perhaps God through evolution has given us a biology that prevents us from being absolutely satisfied, because it keeps us active, curious, awake and ambitious.

I want to finish by focusing on the argument of *utility*. Richard Sloan, the investigator and theologian who has critiqued research into religion and health came from Harold's own stable - Duke University. He poses the 'so what?' question. Even were we to show without a shadow of doubt how religion has an impact on our mental health, what would be the utility of such a finding? Would we limit religious practice if it were bad for mental health or promote it if were good? Both proposals are unthinkable.