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Maia Szalavitz TheHuffingtonPost.com

Watching the media cover marijuana is fascinating, offering deep insight into conventional wisdom, bias and failure to properly place science in context. The coverage of a new study claiming that marijuana increases the risk of later psychotic illnesses like schizophrenia by 40% displays many of these flaws.

What are the key questions reporters writing about such a study needs to ask? First, can the research prove causality? Most of the reporting here, to its credit, establishes at some point that it cannot, though you have to read pretty far down in some of it to understand this.

Second -- and this is where virtually all of the coverage falls flat -- if marijuana produces what seems like such a large jump in risk for schizophrenia, have schizophrenia rates increased in line with marijuana use rates? A quick search of Medline shows that this is not the case -- in fact, as I noted here earlier, some experts think they may actually have fallen. Around the world, roughly 1% of the population has schizophrenia (and another 2% or so have other psychotic disorders), and this proportion doesn't seem to change much. It is not correlated with population use rates of marijuana.

Since marijuana use rates have skyrocketed since the 1940's and 50's, going from single digit percentages of the population trying it to a peak of some 60% of high school seniors trying it in 1979 (stabilizing thereafter at roughly 50% of each high school class), we would expect to see this trend have some visible effect on the prevalence of schizophrenia and other psychoses.

When cigarette smoking barreled through the population, lung cancer rose in parallel; when smoking rates fell, lung cancer rates fell. This is not the case with marijuana and psychotic disorders; if it were, we'd be seeing an epidemic of psychosis.

But readers of the AP, Bloomberg, The Washington Post, and Reuters were not presented with this information. While CBS/WebMD mentioned the absence of a surge in schizophrenia, it did so by quoting an advocate of marijuana policy reform, rather than citing a study or quoting a doctor. This slants the story by pitting an advocate with an agenda against a presumably neutral medical authority.

Furthermore, very little of the coverage put the risk in context. A 40% increase in risk sounds scary, and this was the risk linked to trying marijuana once, not to heavy use. To epidemiologists, however, a 40% increase is not especially noteworthy-- they usually don't find

risk factors worth worrying about until the number hits at least 200% and some major journals won't publish studies unless the risk is 300 or even 400%. The marijuana paper did find that heavy use increased risk by 200-300%, but that's hardly as sexy as try marijuana once, increase your risk of schizophrenia by nearly half!

By contrast, one study found that alcohol has been found to increase the risk of psychosis by 800% for men and 300% for women. Although this study was not a meta-analysis (which looks at multiple studies, as the marijuana research did), it certainly is worth citing to help readers get a sense of the magnitude of the risk in comparison with other drugs linked to psychosis.

Of course, if journalists wanted to do that, they would also cite researchers who disagree with the notion that marijuana poses a large risk of inducing psychosis at all, such as Oxford's Leslie Iversen, author of one of the key texts on psychopharmacology, who told the Times of London that

"Despite a thorough review the authors admit that there is no conclusive evidence that cannabis use causes psychotic illness. Their prediction that 14 per cent of psychotic outcomes in young adults in the UK may be due to cannabis use is not supported by the fact that the incidence of schizophrenia has not shown any significant change in the past 30 years."

Such comments don't help the media stir up reefer madness, which they've been doing, quite successfully, for the last few decades. Perhaps covering the marijuana beat makes you crazy.

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