An Emerging Deworming Controversy

Bednets garner attention for being a cheap and effective way to ensure the health of children. Meanwhile, a few other interventions, backed by rigorous evidence, have quietly emerged as potential game-changing health solutions. One example is deworming medication.

A 2004 study in Western Kenya provided combination deworming medication for all children, disregarding whether they did or did not already have worms. Authors Edward Miguel and Michael Kremer observed a near 25% reduction in school absenteeism for students who were received the medication verses those who did not. For a mere $3.50 a student can attend one more year of school. The cheap cost of the medications as compared to other interventions, such as subsidizing school uniforms, made it an effective solution to the problem of student attendance.

The evidence was used by research NGO Innovations for Poverty Action to develop the Deworm the World (DtW) campaign. DtW estimates that “600 million school-aged children are at risk of being infected with parasitic worm.” To maximize impact, DtW has partnered with 27 countries and reached over 37 million children since its founding at the World Economic Forum in 2007.

However, the evidence has recently come under heavy criticism. A systematic review of the efficacy of deworming drugs on improving nutrition, school performance and cognitive test scores published by the Cochrane Collaboration said other studies raised questions concerning the impact of school-based deworming.

Authors Taylor-Robinson et al. found that previous studies on deworming interventions showed little efficacy in improving education and health outcomes. The review is an update of a previous review from Cochrane that was equally as critical of deworming evidence. GiveWell, a charity rating organization, applauded the update of the review in a blog post last week writing, "We find these responses from Taylor-Robinson et al. compelling and we believe the new review to be a significant improvement over the older Cochrane review of deworming."

The Chochrane review questions the evidence touted by Duflo and others by saying that the Miguel and Kramer study lacked baseline data on school attendance and was done in an area with an unusually high rate of worm infection. These concerns, taken alongside a series of other studies both published and unpublished, form the basis for Cochrane seriously questioning the efficacy of the intervention.

A blog post authored by Miguel, Kremer and others on the Innovations for Poverty Action blog points out flaws in the Chochrane review. They point out that Taylor-Robinson et al. misread their study which in fact included a baseline for two of the groups, one of which transitioned from a control to a treatment group during the study.

Furthermore, the Chochrane review excluded three randomized and quasi-randomized studies on soil-transmitted intestinal worms (STH).

“Bleakley (2004) shows that an early 20th century campaign to eradicate hookworm in the US south improved school attendance, literacy, and income in adulthood. Ozier
shows that children under one year of age (and therefore too young to be treated) at the time of mass deworming in their communities in Kenya had significantly improved cognitive outcomes due to spillover effects. Baird et al (unpublished) shows strong long term labor market outcomes of children treated for STH,“ point out Miguel, et. al.

As the debate continues, more questions begin to emerge. David McKenzie of the World Bank looks into the debate and emerges from the discussion asking, "whether or not the less impressive evidence found in other studies is because those studies are not designed as well as Miguel and Kremer, or because they were in different settings where the impacts differ, or whether the Cochrane review is not comparing like with like."

"One of our big take-aways from the Taylor-Robinson et al. review is that we should be really worried about publication bias, data-mining, and the representativeness of the research we rely on." says GiveWell. However, the site also concludes that the new review does not fundamentally change their view on deworming as an intervention. GiveWell continues to argue that bednets to protect against malaria remain the most cost-effective intervention, but they say that they continue to recommend the Schistosomiasis Control Initiative as their number 2 charity.

By Tom Murphy at 09:00