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CHRISTMAS 2023: WORKFORCE CRISIS

Festive period episodes of *Doctor Who* and population mortality

Should we believe everything we read?

Bob Phillips,¹ Nicola Mackenzie-Croft²

Doctor Who is a quintessentially British story. Although often thought of as science fiction, it is better understood as a genre defying spectacle that displays the victory of good over evil, with magic and mystery at its heart. The programme was born in the first flush of television, but it has lived on as film, animated stories, audio plays, theatre shows, and immersive experiences. A phenomenon raised by a woman (Verity Lambert, the first producer) and a gay man of Asian ethnicity (Waris Hussein, the first director) facing all the prejudices of postwar Britain, it became 60 years old on 23 November 2023 and has never looked better.¹

Dr Who?

The central figure, “the Doctor,” is a Time Lord—one of a species of aliens with two hearts and with the understanding and technologies to allow travel through all of time and space in a blue 1960s police box. The Doctor evolves through time, changing shape, personality, and face through repeated regenerations, while retaining an essential self. The Doctor's adventures range from meeting stone-age humans to meeting immortals at the end of time, through the births of planets and deaths of suns. The Doctor has battled armoured Daleks, inhuman cybermen, globular adipose, vampires, lizards, demons, potato-headed clone warriors, and, frequently, the evils of humanity.

So, can the presence of the Doctor on television in the UK affect mortality rates for the next year across the country? In a linked paper (doi:10.1136/bmj-2023-077143), Riley looked for the answer in a modelled time series analysis of *Doctor Who* episodes aired over the festive period, and subsequent age standardised mortality rates in the UK.² The author used the festive broadcast as a proxy for healthcare teams working over the Christmas period by focusing in on an identifiable individual: “the Doctor.” The study showed that when *Doctor Who* was broadcast on Christmas Day, the subsequent year's age standardised mortality rate in England and Wales was lower, with 0.60 fewer deaths per 1000 person years (95% confidence interval 0.21 to 0.99). The association was noticeable, but weaker, when the show was broadcast over the previous festive period (24 December to 1 January inclusive), with the UK mortality rate dropping by 0.36 per 1000 person years (−0.018 to 0.75).

The study had some important strengths. The author gathered unquestionably authoritative and unbiased data on the exposure (broadcast dates) and outcome (standardised mortality rates).³ The experimental and control groups (years when *Doctor Who* aired

and years without a new *Doctor Who* episode) were clearly defined, and reasonable variations of the definition of exposure—be that Christmas Day itself or the whole festive period—explored. Impeccable mathematical models were used by someone being extremely clever to assess the relationships and evaluate them for their precision and fit. Alternative approaches to test the hypothesis were run, and from the way the question was decided with prospective engagement of a very active fan community (indeed, the incarnation of the Doctor known as the Professor⁴ himself appears in the report), this was not some data dredging exercise.

The conclusions drawn reflect the results seen. In many ways the study is an exemplar of a well written secondary data analysis. As a final seal of approval, it has been published in *The BMJ* after extensive peer review and editorial scrutiny. But in reality, releasing a melange of sound and vision on a midwinter holiday could never truly change the mortality rate of a population. This has to be a chance finding, drawn from luck, or the clustering of episodes airing, and I doubt that anyone who had undertaken the analysis with other “medical” shows (for example, *Call the Midwife*), would have attempted to publish.

Central truths

The stated aim of this study was “To examine the effect of a (fictional) doctor working during the festive period on population health.” And maybe there is truth in the notion that providing kind, thoughtful, timely healthcare, free at the point of need, to those who need assistance, really can make a difference.

The Doctor in “*Doctor Who*” represents the best of everyone who works in healthcare. While in the past the Doctor has been seen as a white cisgender man, recent incarnations have shown we have only peered through a limited lens. We have learnt that the Doctor has always been every gender, and that they have been of other sexual orientations, other ethnic groups, notably neurodivergent in many cases, and deeply humane in all. They have been old and young, and impossible. The character of the Doctor can be seen as a surgeon-innovator, physician-detective, clinical pharmacologist, microbiologist, radiologist, obstetrician, psychiatrist, palliative care provider, and (above all) a paediatrician. The Doctor has always acknowledged central truths of looking after patients, the need for empathy⁵ in their motto of “never be cruel, never be cowardly,”⁶ and a warning to “Never be certain of anything. It's a sign of weakness.”⁷ The Doctor probably inspired many people to make better choices and live better lives, both on screen and off screen.⁸ If you are unsure of that, cast about the

question to your colleagues and see how many (British in particular) ones will affirm that view.

Neil Gaiman, an English science fiction and fantasy author who has written episodes of *Doctor Who* and created many other fantastical worlds within his oeuvre, asserted that we need our fiction: “Good lies that tell true things.”⁹ While health professionals work this Christmas, six decades after the clattering opening of a police box in a junkyard in London, they can look at each small beautiful action they make and say “we’re saving lives” and “we’ve got a paper we can cite to prove it.”

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