Sexual abuse and psychosis: the security of research findings

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Sexual abuse is by its very nature likely to have pernicious effects: certainly its psychiatric consequences are extensive. They include a range of affective disorders, eating disorders, and alcohol and drug abuse (Jonas et al., 2011), but also psychotic disorders (Bebbington et al., 2004; 2011; Varese et al., 2012; de Vries et al., 2018)

The paper by Bourgeois and colleagues (2018) in this issue of *Schizophrenia Research* uses a large case-control study to evaluate the relationship between child sexual abuse and later psychosis. It relies on an administrative definition of sexual abuse, that is, 1) a sample attending a child protection agency in the context of 2) a substantiated report of sexual abuse. Because people were required to meet both these criteria, they are therefore not equivalent to the total group of sexually abused individuals. It should be noted also that the definition of abuse is quite broad as it did not necessarily involve physical contact. Each individual in the index group was matched with a population control subject of the same sex from the same area, and with the same birth month. Controls had no identified contact with a child protection agency in relation to an episode of abuse: this would minimise but not eliminate the possibility of sexual abuse in controls. However, as the authors point out, this militates against the hypothesised association between abuse and psychosis. The diagnosis of psychosis was drawn from health administrative databases, which raises obvious (though not necessarily major) issues of quality control. The average age of participants at entry to the study was around 11, rising to 18 at the end of follow-up. Over this period, there was a tenfold excess in diagnoses of psychosis in those who had been sexually abused. If the effect of abuse included bringing forward the age of onset, this increase would have been smaller with longer follow up (de Vries et al., 2018).

These comments aside, there are very few longitudinal studies linking sexual abuse with psychosis. The paper is thus of considerable interest, and deserves to be placed in context.

The current view that sexual abuse is causally related to psychosis is based on inference from the results of many studies. Could this consensus nevertheless be spurious? Certainly our knowledge is dependent on data of very variable quality, both in relation to the abuse and to the symptoms associated with it. This is to an extent inevitable, as study designs constrain methods of assessment and vice versa, while both are constrained by economic feasibility. It is therefore worth considering how far methodological features may restrict our ability to draw substantive conclusions.

A history of sexual abuse is almost always identified from retrospective reports, usually from the victim. However, such reports are influenced by the victims' willingness and the clarity of their memory. Reportage may be impeded or assisted by many factors, some of which will be significantly related to mental state. Abnormal mental states may distort or suppress memory of the experience. They may also encourage or, more commonly, discourage disclosure. Shame is especially likely to be inhibitory, assisted by a fear of how the information will be received.

In some studies the history of abuse is based on self-completed questionnaires. These are particularly hostage to the respondent's motivation. Moreover, as there is usually no access to collateral information, the quality of the information must often be taken on trust. Face-to-face interviews bring their own problems: people often avoid being open when responding to questions about something upsetting they would rather forget.

There are techniques for improving disclosure and reportage in interviews. Careful positioning of the questions within the interview is important. The quality of information will also be improved by the precision of questioning: clarity about what happened and when. The English National Psychiatric Morbidity Surveys of 2007 and 2014 (McManus et al., 2009, 2016) provide an example of techniques designed to optimise data quality. Detailed information about abuse experiences was elicited using Computer Assisted Self-Interview (CASI). In this section, the respondent was handed a laptop

computer, and instructed how to enter the answers to the relevant questions themselves. They were told, truly, that their answers would be confidential, and that the interviewer would have no access to the information recorded.

There are also important problems with the identification of psychotic phenomena. Their definition in (best) psychiatric practice is precise. For example, auditory hallucinosis has been defined as the experience of noises or voices, frequently but not necessarily located in external objective reality, and over which the person experiencing them has no sense of possession. They have the same quality of "loudness" as sounds clearly generated in the external world. These ideal attributes are articulated for example in the glossary of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN, WHO 1990), an instrument developed specifically for use in psychiatric research. However, in epidemiological studies involving community samples the definition is almost always looser: hallucinations may be defined merely as un-attributable voices or sounds, i.e. auditory experiences whose origins cannot be guaranteed. Rigorously defined hallucinations may then correspond only to a minority of positive endorsements. Similarly, the definitions of delusions in epidemiological research may be looser than the clinical equivalent.

Over the last decade or so there has been an increasing recognition that individual psychotic symptoms may occur in isolation in samples of the general population (Bebbington et al., 2011). The association of sexual abuse with such subthreshold phenomena would increase the force of findings in relation to diagnosed psychosis. However, while representative sampling at the population level strengthens causal inference, such studies remain subject to the reservations about data quality described above.

Alongside the specific association with psychosis, sexual abuse has effects on a range of disorders characterised by changes in affect, motivation and cognition (Jonas et al., 2011). In other words, the link is not actually specific (de Vries et al., 2018). Occam's razor requires us to consider whether these associations operate through a common mechanism. A central element of sexual abuse, very clear to the author in his years as a psychiatrist in a women's prison, is explicit or implicit denigration. This is likely to have both affective and cognitive consequences. There is now good evidence, both that people with psychosis have significant affective symptoms, and that these symptoms may mediate the sexual-abuse/psychosis connection (Freeman et al., 2012; Marwaha et al., 2014; Marwaha & Bebbington, 2015). There is also evidence for alternative pathways operating via cognitive consequences (Hardy et al., 2016; Reininghaus et al., 2016; Appiah-Kusi et al., 2017). These studies support the current drive to treat psychosis with psychological techniques targeting mediators.

So how robust are the findings reported in the literature? Overall, despite differing designs, methodologies, contexts, and samples, investigations are generally positive. De Vries et al (2018) recently published a meta-analysis of 27 studies of the association of different types of victimisation, violent and otherwise, associated with psychosis. Every type (including sexual abuse) was reported in around 20% of respondents with psychosis, and the experience of any type was associated with a 4-6 fold increase in psychosis. Thus, despite worries about the level of methodological noise, I think we must conclude that a strong signal emerges linking prior sexual abuse with psychosis.

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