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Low back pain across the life course

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S U M M A R Y

Back pain episodes are traditionally regarded as individual events, but this model is currently being challenged in favour of treating back pain as a long-term or lifelong condition. Back pain can be present throughout life, from childhood to older age, and evidence is mounting that pain experience is maintained over long periods: for example, people with pain continue to have it on and off for years, and people without pain do not suddenly develop long-term pain. A number of factors predict back pain presence in epidemiological studies, and these are often present, and predictive, at different life stages. There are also factors present at particular life stages, such as childhood or adolescence, which predict back pain in adulthood. However, there are little published data on long-term pain patterns or predictors over the life course. Such studies could improve our understanding of the development and fluctuations in back pain, and therefore influence treatment approaches.

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Background

Historically, the epidemiology of back pain was most commonly studied in adults, predominantly working age adults. Risk factors for back pain were also principally those factors present in adults at the time of onset, or shortly preceding the apparent onset of the condition. This focus was due at least in part to the prevailing belief that back pain was usually due to an injury, often occurring in the workplace. Research studies were often orientated around this model and focussed on the onset or persistence of episodes of pain, or studying risk factors present at a time point when an individual did not have pain and predicting the presence of pain at a later point. This model has been challenged over the last couple of decades as a result of three factors: (1) developments in our understanding of the natural (or clinical) course of back pain, highlighting that individuals often experience repeated episodes, and that these episodes are not independent of each other; (2) increasing knowledge about the presence of back pain in children, young people and older age adults; and (3) the emergence of the biopsychosocial model of back pain [1], which indicated that psychological and social factors, as well as biomedical factors, might be related to the occurrence of back pain. One result of this is that studying single episodes of pain, or presence of pain at one-off time points, is limiting our understanding of the condition.

Similar issues have been faced by researchers of other conditions and they have led to the development of life-course epidemiology. This can be defined as "the study of long-term biological, behavioural, and psychosocial processes that link adult health and disease risk to physical or social exposures acting during gestation, childhood, adolescence, earlier in adult life, or across generations" (Ref. [2], pg 3). Application of methods and principles from life-course epidemiology to problems such as cardiovascular disease and respiratory conditions has led to improved understanding of the widespread nature of their influence on health. Back pain researchers are beginning to take a longer-term or life-course perspective, [3] and this chapter aims to summarise some of the work that has been done and point to potential future directions.

Taking a lifetime perspective

The first challenge in moving on from our historical models of back pain is conceptual – thinking of back pain as a long-term or recurrent condition rather than a series of unrelated episodes. A simple 'yes/no' question on previous history of back pain has usually been the only information collected about prior pain experience. It is important to understand that people with no back pain at a point in time are not all the same: some may never have had back pain previously, whereas others may have had one or more significant episodes of pain in the past. Ignoring this fact, and simply studying the onset of a new episode, can introduce biases such as incidence-prevalence bias [4] – people who have had back pain before (from which they recovered) will be different from people who have never had back pain, as they might, for example, have certain illness perceptions or health behaviours as a result of their prior pain experience. In classical epidemiology, a risk factor is present in someone without the disease and is related to future onset of disease, but in someone with a prior history of back pain, is a risk factor really a prognostic factor?

Although there is a general understanding that prior history of back pain is related to occurrence of future episodes (e.g., Ref. [5]), little is known about the specific influence of the timing, nature and duration of those episodes – principles from life-course epidemiology relating to chains of risk and cumulative exposure might help elucidate these issues.

Our lack of understanding about back pain over the life course may be limiting treatment, as health care is usually focussed on discrete episodes of pain. There may be alternative approaches to the prevention and management of back pain that could be highlighted by taking a life-course approach.

Epidemiology of back pain over the life course

Prevalence of back pain over the life course

A recent systematic review has estimated the point prevalence of low back pain to be 12%, with a 1-month prevalence around 23% [6]. There is no strong evidence that these figures are different when