

# Musculoskeletal disorders in the teaching profession: an emerging workplace hazard with significant repercussions for developing countries

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Musculoskeletal disorders (MSD) represent one of the most common and important occupational health problems in the teaching profession, which although long neglected, has attracted increasing concern in recent years<sup>1, 2)</sup>. By definition, MSD include a wide range of inflammatory and degenerative conditions affecting the muscles, joints, tendons, ligaments, nerves, bones and the localised blood circulation system, that may be caused by or aggravated by work tasks and by the effects of the immediate environment in which work is carried out<sup>3)</sup>. School teachers in general, have been demonstrated relative to other occupational groups, to report high rates of MSD<sup>4)</sup> of between 40% and 95%<sup>5)</sup>. The work of a teacher involves not only teaching students, but also preparing lessons, assessing students' work and extracurricular activities, such as sports. These activities may cause teachers to suffer adverse mental and physical health issues due to their unique and wide variety of job functions<sup>6)</sup>.

By body site, school teachers appear to be more prone to suffer MSD of the back, neck and upper limbs<sup>4, 6, 7)</sup>. While a number of studies have been carried out to specifically investigate back and neck related MSD, few studies have looked at whole body MSD, and even fewer have been carried out to specifically investigate MSD of the lower extremities. The literature suggests that the cause of MSD is multifactorial<sup>5, 8, 9)</sup>, with individual factors such as female gender<sup>1, 10, 11)</sup>, smoking, sleep disturbance,

previous injury and number of children having been found to contribute<sup>12)</sup>. While MSD has been positively associated with length of employment, research findings are somewhat inconsistent in this regard, with some studies reporting longer length of employment as being positively associated with MSD; while others have found that new teachers are more likely to report MSD. Similar, albeit conflicting, findings have also been observed for age<sup>5)</sup>. Work-related factors such as school level, prolonged standing, sitting and awkward posture are known to be positively associated with MSD<sup>1, 12, 13)</sup>. Research suggests that psychosocial factors such as high workload/demands, high perceived stress levels, low social support, low job control, low job satisfaction and monotonous work are most likely associated with MSD among school teachers<sup>5, 11)</sup>. On the other hand, factors such as regular exercise and satisfaction with one's work environment may have a protective effect against MSD within this occupational group<sup>11)</sup>.

In the teaching profession, MSD has been shown to lead to ill health retirement of school teachers in, for example, developed countries such as Ireland<sup>14)</sup> and Scotland<sup>15)</sup>. In developing countries, however, the true burden of MSD and its impact on workplace productivity is not well known. One can hypothesise that the burden is probably high. In a recent study of school teachers in Botswana, for example, it was found that MSD prevented some teachers from carrying out their normal activities, and caused some to change jobs or duties, reduce their activity at home and seek medical attention. Some teachers in this study also reported that MSD resulted in them being unable to work

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for several days<sup>1</sup>). This clearly suggests that if preventative control measures are not put in place to curb the burden of MSD and the progression of symptoms; governments of all countries will likely find themselves battling with more widespread disabilities and increased health costs in future.

The complex nature of MSD risk factors in developed and developing countries suggests that any single intervention strategy would probably be suboptimal in reducing MSD among school teachers. In fact, if little or nothing is done to reduce the prevalence rate of this crucial workplace problem, MSD may potentially lead to reduced teachers' performance which may contribute to poor students' performance, increased sick leave, ill-health, early retirement or increased health care costs. Cost-effective intervention strategies are particularly important for developing countries. Therefore, to help alleviate the burden among teachers in these regions, as elsewhere, a greater emphasis needs to be placed on raising MSD awareness. Awareness and knowledge of the relationship between school teaching and MSD are important for preventing MSD and minimising their progression.

In addressing the serious issue of MSD in the teaching profession, ergonomics training specific to MSD risk factors and prevention should now be introduced into teachers' training institutions, while refresher courses relating to the work tasks and workstations of teachers should also be introduced for in-service teachers. As the majority of MSD studies conducted among teachers have focused on recall information and self-reported MSD, future research may involve clinical diagnosis of MSD and its severity, ideally undertaken with longitudinal studies. Future research should employ a mixed-methods approach, to include a more rigorous quantitative approach such as observational studies which include the physical observation of teachers when carrying out their work tasks and inspection of their workstations for further identification of risk factors. Future research should also consider the epidemiological profile and medical causes of ill-health or early retirement of teachers in both developed and developing countries. The implementation of these measures will go a long way in helping to alleviate the significant burden of workplace injury amongst this important occupational group.

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