

## Risk Factors Associated to Low Back Pain among Active Adults: Cross-Sectional Study among Workers in Tunisian Public Hospital

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**Abstract :** Backgrounds: Currently, low back pain (LBP) is one of the most prevalent public health problems, which caused severe morbidity among a large portion of the adult population. It is also associated with heavy direct and indirect costs, in particular, related to absenteeism and early retirement. Health care workers are one of most occupational groups concerned by LBP, especially because of biomechanical and psycho-organizational risk factors. Our current study aims to investigate risk factors associated with chronic low back pain among Tunisian caregivers in university-hospitals. Methods: Cross-sectional study conducted over a period of 14 months, with a representative sample of caregivers, matched according to age, sex and work department, in two university-hospitals in Tunisia. Data collection included items related to socio-professional characteristics, the evaluation of the working capacity index (WAI), the occupational stress (Karazek job strain questionnaire); the quality of life (SF12), the musculoskeletal disorders Nordic questionnaire, and the examination of the spine flexibility (distance finger-ground, sit-stand maneuver and equilibrium test). Results: Totally, 293 caregivers were included with a mean age equal to  $42.64 \pm 11.65$  years. A body mass index (BMI) exceeding 30, was noted in 20.82% of cases. Moreover, no regular physical activity was practiced in 51.9% of cases. In contrast, domestic activity equal or exceeding 20 hours per week, was reported by 38.22%. Job strain was noted in 19.79 % of cases and the work capacity was 'low' to 'average' among 27.64% of subjects. During the 12 months previous to the investigation, 65% of caregivers complained of LBP, with pain rated as 'severe' or 'extremely severe' in 54.4% of cases and with a frequency of discomfort exceeding one episode per week in 58.52% of cases. During physical examination, the mean distance finger-ground was  $7.10 \pm 7.5$ cm. Caregivers assigned to 'high workload' services had the highest prevalence of LBP (77.4%) compared to other categories of hospital services, with no statistically significant relationship ( $P = 0.125$ ). LBP prevalence was statistically correlated with female gender ( $p = 0.01$ ) and impaired work capacity ( $p < 10^{-3}$ ). Moreover, the increase of the distance finger-ground was statistically associated with LBP ( $p = 0.05$ ), advanced age ( $p < 10^{-3}$ ), professional seniority ( $p < 10^{-3}$ ) and the BMI  $\geq 25$  ( $p = 0.001$ ). Furthermore, others physical tests of spine flexibility were underperformed among LBP suffering workers with a statistically significant difference (sit-stand maneuver ( $p = 0.03$ ); equilibrium test ( $p = 0.01$ )). According to the multivariate analysis, only the domestic activity exceeding 20H/week, the degraded quality of physical life, and the presence of neck pain were significantly correlated to LBP. The final model explains 36.7% of the variability of this complaint. Conclusion: Our results highlighted the elevate prevalence of LBP among caregivers in Tunisian public hospital and identified both professional and individual predisposing factors. The preliminary analysis supports the necessity of a multidimensional approach to prevent this critical occupational and public health problem. The preventive strategy should be based both on the improvement of working conditions, and also on lifestyle modifications, and reinforcement of healthy behaviors in these active populations.

**Keywords :** health care workers, low back pain, prevention, risk factor

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