



Assessing the Effects on Clinical Outcomes of an Outsourced Pharmaceutical Care Service in Portuguese Community Pharmacies

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SUMMARY. The systematic implementation of pharmaceutical care (PC) in Portuguese community pharmacies is very limited. This study aims to assess the effectiveness of implementing PC in Portuguese community pharmacies using an outsourcing-based regimen. Cholesterol levels, body mass index, blood pressure, glycated haemoglobin and glycaemia were the main outcome measures. Pre-post paired comparisons of clinical biomarkers were performed. During six years, 510 patients were followed with a dropout rate of 25.7%. The total cholesterol levels (n = 148) reduced 31.4 ± 3.42 mg/dL ($P < 0.001$), whereas HDL cholesterol was non-significantly increased ($P = 0.942$). The body mass index (n = 293) and systolic blood pressure (n = 142) reduced 0.4 ± 0.09 kg/m² ($P < 0.001$) and 24.4 ± 1.63 mmHg ($P < 0.001$), respectively. Glycated haemoglobin (n = 52) decreased 1.4 ± 0.23 % ($P < 0.001$), whereas the fasting blood glucose (n = 47) decreased 44.8 ± 8.06 mg/dL ($P < 0.001$). This outsourced strategy induced significant improvements in the patients' health and allowed the effective implementation of this service on a routine basis.

RESUMEN. La implantación sistemática de la atención farmacéutica (AF) en farmacias comunitarias portuguesas es muy limitada. Este estudio evalúa la efectividad de la implantación de AF en farmacias portuguesas usando un régimen de *outsourcing*. Los principales resultados a medir eran niveles de colesterol, índice de masa corporal (IMC), presión arterial, hemoglobina glicosilada y glicemia. Se realizaron comparaciones pre-post de los biomarcadores. Durante seis años se siguieron 510 pacientes con un abandono del 25,7%. El colesterol total (n = 148) se redujo en $31,4 \pm 3,42$ mg/dL ($P < 0.001$), aunque el HDL no tuvo un incremento significativo ($P = 0.942$). El IMC (n = 293) y la presión arterial (n = 142) se redujeron en $0,4 \pm 0,09$ kg/m² ($P < 0.001$) y $24,4 \pm 1,63$ mmHg ($P < 0.001$), respectivamente. La hemoglobina glicosilada (n = 52) disminuyó en $1,4 \pm 0,23\%$ ($P < 0.001$), mientras que la glucemia basal (n = 47) disminuyó en $44,8 \pm 8,06$ mg/dL ($P < 0.001$). La estrategia de *outsourcing* mejoró significativamente la salud de los pacientes y permitió la implantación efectiva de AF.

KEY WORDS: Clinical pharmacy, Community pharmacy, Pharmaceutical care, Pharmacists, Portugal, Service implementation.

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