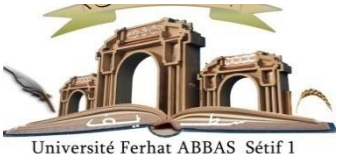
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Pharmaceutical Survey of phytoestrogen-based dietary supplements

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Abstract

This cross-sectional survey evaluated phytoestrogen supplement availability, demographics, and counseling in Sétif, Algeria. Research across 70 pharmacies assessed 13 local and imported products. Geographic availability was high in urban (90.90%) and peri-urban (87.90%) dispensaries but absent (0%) in rural areas due to socio-economic factors. Women aged 45–55 dominated consumers (54.90%) managing hot flashes (57.14%) and vaginal dryness (40%), while a younger cohort (<45 years, 30%) targeted PCOS and fertility. Phytochemically, Sage (Salvia officinalis) prevailed (38%). Although prescriptions (64.28%) and pharmacist recommendations (54.22%) drove choices, compliance was low; 70.40% purchased supplements "only once" due to premium non-reimbursable pricing. Furthermore, 76% of pharmacists mostly early-career professionals under 10 years of experience (70.40%) admitted to knowledge gaps regarding hormonal risks. These findings highlight a polarized market and emphasize an urgent need for continuing professional education to ensure patient safety.

Keywords: Pharmaceutical Survey, Phytoestrogens, Dietary Supplements, Menopause, PCOS, Salvia officinalis, Setif.

الملخص

قامت هذه الدراسة المستعرضة بتقييم مدى توفر مكملات الإستروجين النباتي، وديموغرافية المستهلكين، والممارسات الاستشارية في سطيف، الجزائر. وشمل البحث الميداني عبر 70 صيدلية تقييم 13 منتجاً محلياً ومستورداً. وقد سجلت الصيدليات الحضرية (90.90%) وشبه الحضرية (87.90%) معدلات توفر عالية، بينما انعدمت تماماً (0%) في المناطق الريفية لعوامل اقتصادية واجتماعية. شكلت النساء اللواتي تتراوح أعمارهن بين 45 و55 عاماً الفئة المستهلكة الأكبر (54.90%) لإدارة الهبات الساخنة (57.14%) والجفاف المهبلي (40%)، بينما قصدت فئة أصغر سناً (أقل من 45 عاماً، 30%) هذه التركيبات لعلاج تكيس المبايض ودعم الخصوبة. من الناحية النباتية الكيميائية، برزت الميرمية (Salvia officinalis) كمكون سائد (38%). ورغم أن الوصفات الطبية (64.28%) وتوصيات الصيادلة (54.22%) كانتا المحرك الأساسي للاستهلاك، إلا أن الالتزام كان منخفضاً؛ حيث اشترت 70.40% من المريضات المكملات "لمرة واحدة فقط" بسبب الأسعار المرتفعة غير القابلة للتعويض. علاوة على ذلك، أقر 76% من الصيادلة — ومعظمهم مهنيون في بداية مسيرتهم بأقل من 10 سنوات خبرة (70.40%) — بوجود فجوات معرفية لديهم حول المخاطر الهرمونية. تؤكد هذه النتائج على وجود سوق متمركز، وتبرز حاجة ملحة للتعليم المهني المستمر لضمان سلامة المرضى.

الكلمات المفتاحية: دراسة صيدلانية، الإستروجينات النباتية، المكملات الغذائية، انقطاع الطمث، متلازمة تكيس المبايض، Salvia officinalis، سطيف.

Résumé

Cette étude transversale a évalué la disponibilité, le profil démographique et le conseil pharmaceutique des compléments à base de phytoestrogènes à Sétif, Algérie. La recherche menée auprès de 70 pharmacies a analysé 13 produits locaux et importés. La disponibilité géographique était élevée dans les officines urbaines (90,90%) et périurbaines (87,90%), mais totalement absente (0%) en milieu rural pour des raisons socio-économiques. Les femmes âgées de 45 à 55 ans constituaient la majorité des consommatrices (54,90%) pour gérer les bouffées de chaleur (57,14%) et la sécheresse vaginale (40%), tandis qu'un groupe plus jeune (<45 ans, 30%) ciblait le SOPK et la fertilité. Sur le plan phytochimique, la sauge (Salvia officinalis) prédominait (38%). Bien que les ordonnances (64,28%) et les recommandations des pharmaciens (54,22%) aient guidé les choix, l'observance était faible; 70,40% n'ont acheté le complément "qu'une seule fois" en raison des prix élevés non remboursables. De plus, 76% des pharmaciens — principalement de jeunes professionnels ayant moins de 10 ans d'expérience (70,40%) — ont avoué des lacunes cognitives concernant les risques hormonaux. Ces résultats mettent en évidence un marché polarisé et soulignent l'urgence d'une formation professionnelle continue pour garantir la sécurité des patientes.

Mots-clés: Enquête pharmaceutique, Phytoestrogènes, Compléments alimentaires, Ménopause, SOPK, Salvia officinalis, Sétif.

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INTRODUCTION

Introduction

The use of medicinal plants as therapeutic agents dates back to ancient medical traditions, and this historical legacy finds a modern expression in the use of phytoestrogen-based dietary supplements to restore hormonal balance in women suffering from menopause or hormonal fluctuations, as these compounds act by binding to estrogen receptors to address hormonal deficiencies **(Schulz et *al.*, 2001).**

From a regulatory standpoint, phytoestrogen supplements occupy a legally ambiguous space globally, as illustrated by the European Commission's decision to suspend their health claims due to insufficient standardized clinical data, placing the pharmacist in the critical role of last line of defense against indiscriminate consumption **(Lenssen et *al.*, 2019).**

Clinically, although soy-derived phytoestrogens are widely marketed as a natural alternative to hormone replacement therapy, evidence of their efficacy remains modest, and emerging data suggest potential tumorigenic risks under certain conditions, further reinforcing the pharmacist's responsibility to provide evidence-based guidance **(Kurzer, 2003).**

Against this backdrop, a field study was conducted across urban, peri-urban, and rural pharmacies in Setif to evaluate the availability of these supplements, their perceived effectiveness in managing menopausal symptoms, fertility issues, and PCOS, as well as the quality of pharmaceutical counseling provided to consumers.

To present this research clearly, the dissertation is structured into two main parts spanning four chapters: a theoretical part covering the literature on phytoestrogens and commercial dietary supplements, and a practical part detailing the methodological framework and the statistical analysis and discussion of the survey findings, before closing with a general conclusion summarizing the key outcomes and future perspectives.