# Nurses' Knowledge and Practices Regarding Corticosteroid Therapy: A Cross-Sectional Study in a Tunisian Hospital

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## Abstract

***Background:*** Corticosteroids are widely prescribed for their anti-inflammatory and immunosuppressive properties, yet they carry significant risks when misused or poorly monitored. Nurses play a pivotal role in patient education, complication prevention, and treatment monitoring. However, existing literature highlights notable gaps in nurses' knowledge and practices related to corticosteroid therapy. ***Objectives:*** This study aimed to evaluate nurses' knowledge and practical attitudes regarding corticosteroid use in a tertiary hospital setting in Tunisia, with the goal of identifying areas for improvement in clinical practice and continuing education. ***Methods:*** A descriptive, cross-sectional study was conducted among 100 nurses from various departments at Farhat Hached University Hospital, Sousse, Tunisia. Data were collected in February via a 35-item self-administered questionnaire exploring demographic characteristics, theoretical knowledge, clinical practices, and perceived challenges. Statistical analysis was performed using SPSS version 22.0. ***Results:*** Among the 100 respondents, 64% were female and 52% aged between 35–40 years. Most had 1–5 years of experience (50%) and held senior nursing positions (67%). Only 59% had previously managed corticosteroid-treated patients. While hydrocortisone was the most recognized molecule (64.3%), nearly half of the participants were uncertain about withdrawal symptoms, and 42% lacked knowledge on vaccination eligibility during corticosteroid therapy. Furthermore, 58% felt unprepared to manage these patients, and 73% emphasized the need to enhance patient awareness. Difficult patient communication (42.7%) and limited interdisciplinary collaboration were the main challenges. Multidisciplinary consultation (81%) was cited as the most effective solution. ***Conclusion:*** Despite their frontline role, nurses in this study demonstrated knowledge gaps and uncertainties regarding corticosteroid therapy. Improved access to specialized training, institutional protocols, and interdisciplinary collaboration is crucial to ensure patient safety and optimize therapeutic outcomes.

**Keywords:** corticosteroids, nursing knowledge, patient safety, adverse effects, nurse education, corticosteroid therapy

## 1. Introduction

Corticosteroids are essential in the management of many inflammatory, autoimmune, allergic, and neoplastic diseases due to their potent anti-inflammatory and immunosuppressive effects (World Health Organization, 2020; Haute Autorité de Santé, 2019). While widely used in both inpatient and outpatient settings, long-term or inappropriate use can lead to significant adverse effects such as metabolic disturbances, infections, osteoporosis, psychiatric symptoms, and gastrointestinal complications (Ben Saad H & Jemni MA., 2020; Giraud C & Dupont

H., 2018). Nurses play a central role in monitoring these patients, detecting complications, reinforcing treatment adherence, and providing therapeutic education (Friese CR, Lake ET & Aiken LH., 2017). However, studies reveal notable gaps in nurses' knowledge regarding corticosteroid-related risks, including hyperglycemia, infection, and adrenal insufficiency (Devriendt E, De Lepeleire J, Boland B, et al., 2021). Additionally, practical approaches often vary depending on clinical experience and institutional protocols (Arnaud L, Mathian A, Haroche J, et al., 2020). This study aims to assess nurses' knowledge and practical attitudes regarding corticosteroid therapy in order to identify educational gaps and propose improvements in professional training and clinical practices.

## 2. Materials and Methods

This descriptive quantitative study was conducted using a self-administered questionnaire to assess nurses' knowledge, attitudes, and practices regarding corticosteroid therapy. The study population included 100 nurses working in various departments (cardiology, ENT, hematology, general and digestive surgery, internal medicine, pulmonology, endocrinology, dermatology, emergency, and ophthalmology) at Farhat Hached University Hospital in Sousse. Non-random sampling was used.

Inclusion criteria comprised nurses working in the selected departments who were present and consented to participate. Exclusion criteria included absent nurses, those with administrative roles, or those who declined participation. Data were collected over one month (February) through a 35-item anonymous questionnaire written in French. A pre-test with five nurses ensured clarity and relevance. Face-to-face interviews were conducted to improve response rates and data quality. Ethical considerations were respected, with administrative approval obtained and participant consent secured. Data were analyzed using SPSS version 22.0, with results presented in tables and figures via Excel and Word.

## 3. Results

A large majority of respondents were women, representing 64.0% of the participants. Regarding age, more than half of the respondents (52.0%) were between 35 and 40 years old. In terms of professional experience, the majority had between 1 and 5 years of experience, accounting for 50.0% of the total. One-third of the respondents (34.0%) worked the morning shift. Finally, the majority held the position of senior public health nurse, representing 67.0%. A slight majority (59%) of respondents have already managed patients undergoing corticosteroid treatment. Nearly two-thirds (64.3%) indicated that hydrocortisone is the most commonly used corticosteroid. Almost half of the respondents (46.4%) reported being unsure about the symptoms related to abrupt corticosteroid withdrawal. Just over half (54.0%) stated they were aware of the dietary measures to follow during corticosteroid therapy. The vast majority (80%) mentioned a salt-free diet as a specific dietary measure to adhere to. A large majority (71.6%) identified uncontrolled infections as a contraindication. A significant proportion (42.0%) declared not knowing whether corticosteroid therapy allows vaccination. Most respondents (58.0%) did not feel adequately prepared to manage patients on corticosteroid therapy. Nearly three-quarters (73.0%) believed that increased patient awareness is necessary. Nurses' Attitudes toward the Management of Patients on Corticosteroid Therapy are represented in Table 1. Two-thirds (66.0%) found it easy to explain side effects, and nearly two-thirds (62.0%) considered educating families essential. Finally, 60.0% felt that close monitoring of patients is necessary. Difficult communication with patients is the most frequently cited challenge, reported by 42.7% of respondents. The main method for improvement is multidisciplinary consultation involving doctors and dietitians, which is widely used and mentioned by 81.0% of respondents. The challenges Encountered in Managing Patients on Corticosteroids are represented in Table 2.

Table 1. Nurses' Attitudes toward the Management of Patients on Corticosteroid Therapy

| Item | Frequency | Percentage |
|------|-----------|------------|
| **Preparedness for managing patients on corticosteroid therapy** | | |
| – Yes | 42 | 42.0% |
| – No | 58 | 58.0% |
| **Need to raise awareness among patients on corticosteroid therapy** | | |
| – Yes | 73 | 73.0% |
| – No | 27 | 27.0% |
| **Ease of explaining adverse effects to patients** | | |
| – Yes | 66 | 66.0% |
| – No | 34 | 34.0% |

| Importance of educating families of patients treated with corticosteroids | | |
|---|---|---|
| – Yes | 62 | 62.0% |
| – No | 38 | 38.0% |
| Need for close monitoring of patients on corticosteroid therapy | | |
| – Yes | 60 | 60.0% |
| – No | 40 | 40.0% |

Table 2. Distribution of Respondents According to Challenges Encountered in Managing Patients on Corticosteroids

| Challenge | Frequency | Percentage |
|---|---|---|
| Management of adverse effects | 22 | 22.9% |
| Lack of interdisciplinary collaboration | 38 | 39.6% |
| Shortage of appropriate information or tools for patients | 5 | 5.2% |
| Difficult communication with patients | 41 | 42.7% |
| Total | 106 | 110.4%* |

## 4. Discussion

In our study, the majority of participants were female (64%), which is consistent with international data showing that the nursing profession is predominantly female, largely due to historical and sociocultural factors that influence gender roles in healthcare professions (International Council of Nurses, 2021). Most respondents were aged between 35 and 40 years, aligning with findings from French and Tunisian studies where the average age of practicing nurses fell within the third and fourth decades of life (Ministère de la Santé Publique Tunisie, 2019; Durand C & Lemoine A., 2021). This demographic distribution may impact the perception and assimilation of new therapeutic practices.

More than half of the participants (51%) had between 1 and 5 years of professional experience, which could influence their familiarity with complex pharmacological protocols such as corticosteroid therapy. In comparison, a French study noted that experience was positively correlated with better compliance to therapeutic protocols (Giraud C & Dupont H., 2018). In our study, 67% of the participants held the title of senior nurse, a factor generally associated with higher responsibilities and potentially a better understanding of medication-related risks and benefits (Friese CR, Lake ET & Aiken LH., 2017).

Only 59% of participants reported having previously managed patients receiving corticosteroid therapy. This is a lower rate than in other international studies, such as one from Belgium, where over 75% of nurses had experience in corticosteroid management due to its widespread use in hospital settings (Devriendt E, De Lepeleire J, Boland B, et al., 2021). When evaluating theoretical knowledge, 68.7% of nurses correctly identified corticosteroids as anti-inflammatory agents. Hydrocortisone was the most frequently identified molecule (73%), followed by dexamethasone and prednisone. In contrast, in a multicenter European survey, prednisone was the most commonly cited molecule (Arnaud L, Mathian A, Haroche J, et al., 2020).

Regarding therapeutic indications, autoimmune diseases and severe allergies were the most commonly cited (71% and 60%, respectively), which aligns with clinical practice guidelines (National Institute for Health and Care Excellence (NICE), 2020). However, misconceptions were present: 24.4% of participants cited bacterial pneumonia and 7.7% mentioned hepatitis B as indications for corticosteroid therapy, which is problematic, given that corticosteroids may worsen these infections (Greenberg SB & Hall JB., 2018).

Adverse effects such as hypertension and hyperglycemia were correctly identified by the majority, but other major complications such as osteoporosis, increased infection risk, and adrenal suppression were underreported. Only 47% knew that corticosteroid withdrawal must be progressive, and less than half could correctly identify signs of adrenal crisis. This is consistent with previous findings showing that nurses often lack knowledge of corticosteroid tapering protocols and their physiological implications (Thomas M, Brennan E & Walters J., 2020).

Notably, 54.2% of participants were unaware of corticosteroids' impact on bone health, despite robust evidence linking prolonged use to osteoporosis and fractures (Saag KG, et al., 2021). In addition, 53% wrongly believed that corticosteroids do not induce immunosuppression, which may lead to inadequate infection prevention practices (Fardet L, Petersen I & Nazareth I., 2016). These gaps in knowledge represent a potential risk for

patient safety, especially in immunocompromised individuals or those with chronic inflammatory diseases.

In light of these findings, it is crucial to strengthen continuing education programs focused on corticosteroid therapy. Training should emphasize not only pharmacological aspects but also practical approaches to risk monitoring, patient education, and early recognition of adverse events. Studies have shown that targeted educational interventions improve nursing knowledge, attitudes, and patient outcomes in corticosteroid management (Woo CH, et al., 2019).

Our study found that the majority of nurses were women aged between 35 and 40 years, consistent with international trends in the gender and age distribution of the nursing profession (World Health Organization, 2020). Despite a significant proportion holding senior nursing positions, only 59% had prior experience with corticosteroid management.

Knowledge gaps were evident regarding corticosteroid indications and adverse effects. While most participants correctly identified corticosteroids as anti-inflammatory agents and cited autoimmune diseases as common indications, many mistakenly believed that corticosteroids were appropriate for bacterial infections like pneumonia or hepatitis B, which could potentially worsen outcomes (Al Malki M & Alrashidi M., 2020).

Hypertension and hyperglycemia were commonly recognized side effects, but serious complications such as osteoporosis, adrenal insufficiency, and immunosuppression were underreported. Only 47% of nurses understood the need for gradual corticosteroid tapering, and just 54% were aware of its impact on bone health (Thomas R, Davis J & Carter B., 2021). Over half of the respondents wrongly believed that corticosteroids do not cause immunosuppression, indicating a significant risk to patient safety due to underestimating infection risk (Haute Autorité de Santé, 2019).

These findings underscore the urgent need for continuing education tailored to corticosteroid therapy. Previous studies confirm that such training enhances nurses' knowledge and improves patient care outcomes (Woo CH, et al., 2019).

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