

## The pharmacist's role on transgender care: findings from a literature review

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Transgender is a broad-spectrum term referring to people who do not match their assigned sex at birth. Several issues, including social detachment, poor access to healthcare services, and the lack of social/economic opportunities, have historically affected this population. In this scenario, pharmacists - not mentioned in national and international clinical guidelines/protocols regarding transgender care - might be key professionals to serve and care for this population. The main goal of this literature review was to identify the pharmacists' role in the care of transgender people. The articles were retrieved from scientific databases. After applying filters (e.g., language, full-text availability, and coverage of the research question), seven articles were included in this review. The articles did not present pharmaceutical experiences or practices regarding transgender healthcare. Instead, some articles stressed the inadequate or inappropriate use of hormones and their side effects, also covering the role of this issue in professional development, gaps, and potential opportunities for research and pharmaceutical services. Pharmacists, included in a multi-professional team, could be a key element to promote access to healthcare and the well-being of the transgender population.

**Key words:** *Pharmacy, Pharmacists, Pharmaceutical care, Transgender people.*

### INTRODUCTION

According to the World Professional Association for Transgender Health -WPATH (2012) transgender is a broad-spectrum term referring to people who do not match their assigned sex at birth. The International Statistical Classification of Diseases and Related Health Problems – ICD-10 of the World Health Organization - WHO (1992), defines this phenomenon as transsexualism (code F.64), characterized by a person who needs to be part of a contrary gender from their

sex at birth. As reported by the ICD-10, even though the use of hormones or surgery is not mandatory, transgender people need to belong and be accepted into society as members of their gender, in this case opposite from their biological sex. According to the WHO (1992) the mismatch between gender and the sex assigned at birth causes several issues ranging from discomfort to mental conditions that indicate the need for surgery and/or hormonal treatment. This treatment can provide an agreement between sexual characteristics and gender. Other manuals, e.g., the Diagnostic and Statistical Manual of Mental Disorders – DSM-5 from the American Psychiatric Association - APA (2013) address transgender as gender dysphoria. Consistent with WPATH (2012) in addition to considering or not the

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transsexuality phenomenon as a pathological state, the transgender community has been impacted by several disparities, including society detachment, access gaps to healthcare systems, and the lack of social/economic opportunities.

According to WPATH (2012) stigma and violence toward transgender people is still common. Such violence includes police abuse, client abuse in sex work situations, or intimate partner violence. In addition, circumstances of family rejection, human rights violations, and poor access to education or job opportunities are key factors to promote health issues such as unemployment, poverty, housing insecurity, and marginalization. As reported by the Institute of Medicine - IOM (2011) stigma is a factor that can result in “minority stress”. IOM (2011) defines minority stress as a unique social and chronic experience that causes vulnerabilities and consequent mental health conditions such as anxiety and depression. National and international clinical guidelines/protocols concerning transgender care (e.g., WPATH Standards of Care – 7th version, Endocrine Treatment of Transsexual Persons: An Endocrine Society Clinical Practice Guideline, and Brazilian Ordinance No. 2803) introduce the standards of transgender care. Nurses, psychologists, and medical specialists are mentioned as part of the team that promotes care through counseling, psychotherapy, hormone therapy, and surgery. However, although pharmacists can act and contribute to the care of this population, they are not mentioned in these guidelines.

Pharmacists included in a multi-professional team serve as key elements to promote greater access to healthcare and the well-being of the transgender community. In this scenario, an interprofessional approach must strengthen strategies for providing care and medicines to this vulnerable population. From this perspective, the main goal of this research was to identify scientific studies, experiences, and documented actions concerning pharmacists' role in the care of transgender people. This study was conducted through a literature review in national and international scientific databases. Gaps and potentialities between transgender care and pharmacists' practice are also discussed.

## MATERIAL AND METHODS

The method consisted of a literature review with data from national and international scientific databases. The question was: “What is the pharmacist’s role in transgender care?”. The study design included a qualitative and quantitative approach. First, inclusion and exclusion criteria were defined, followed by the development of the search expression and its application in the PubMed/Medline, LILACS, ScienceDirect, and SciELO databases. The descriptors were selected from the Medical Subject Headings (MeSH) database and connected by Boolean operators (AND/OR). The terms used were *transgender* OR *transsexual* AND *pharmacist* OR *pharmacy*. Database access and data collection were performed through the Periódicos CAPES platform at the Federal University of Vale do São Francisco (UNIVASF) and the Concordia University Wisconsin library portal between June 1, 2017, and December 31, 2017. Because of the limited number of results, time limitation was not applied.

The inclusion criteria were scientific manuscripts concerning the main question of this review and the availability of their full texts in English and Portuguese. Comments, letters, and editorials were also included. Abstracts of scientific meetings or events were excluded. Moreover, seventeen identical articles were found among the databases and excluded. Finally, the results were sent to a reference manager software. Study evaluation and selection were possible through peer review: the first phase consisted of title and abstract reading, whereas the second phase consisted of full-text reading. A third researcher solved divergences regarding whether to include or not an article. The last steps before writing the manuscript were the analysis and extraction of variables (author, year, country, journal’s title, goal, method, and results). A flowchart and a variables table were formulated to summarize the review process and main findings.

## RESULTS AND DISCUSSION

The search expression retrieved 307 articles. After excluding duplicates and applying the inclusion criteria (language and full-text availability), 200 articles remained for the title and abstract reading. During this stage, it was

noticed that an expressive number of texts did not cover the study purpose. Although there were no restrictions concerning the location of a specific descriptor, most articles did not contain the word “pharmacist” in their content. These publications were retrieved because some of their authors were pharmacists or belonged to Schools of Pharmacy. The reason not to establish filters regarding the location of the descriptor in this review was the limited number of results retrieved from the

databases during the search. The shortage of publications containing the word “pharmacist” in the article was a relevant consideration before selecting a study for full-text reading. Furthermore, the title and abstracts did not demonstrate pharmacists’ interventions on the transgender population. Twenty articles were finally selected for full-text reading, seven of which were eligible for this review and extraction of variables. The flowchart exposed in Figure 1 synthesizes the review process.

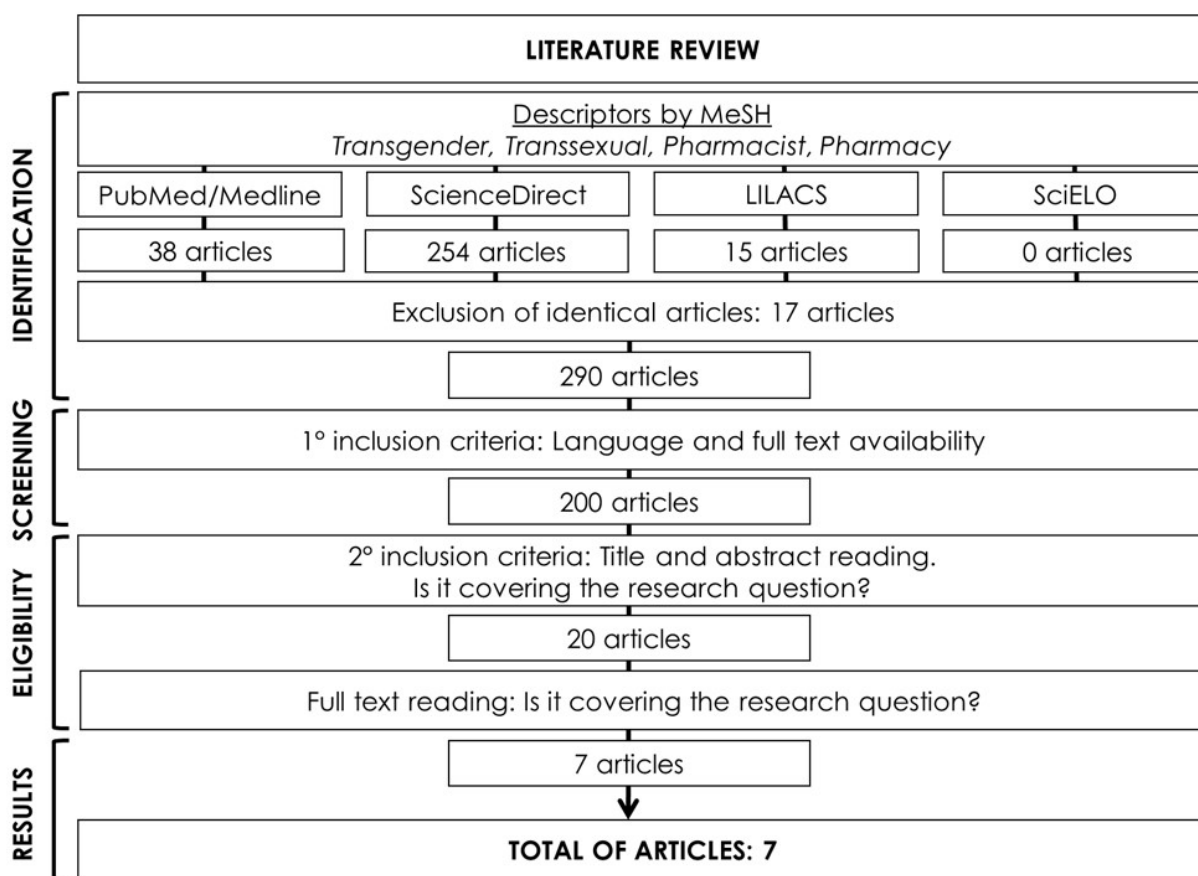


FIGURE 1 -

Most of the articles did not present the pharmacist's practices or experiences on transgender care, and even official guidelines or care standards did not mention the pharmacist's role in this area. Some articles featured an inadequate or inappropriate use of hormones and their side effects. Hormones, mainly non-prescribed and

incorrect use, have been associated with an increased risk of adverse and collateral events. Some articles covered the importance of this issue in professional development and the gaps and potential opportunities for pharmaceutical research and educational programs. Pharmacist leadership was placed on the same level

as other professionals (doctors, nurses, and other healthcare team members). Principles to ensure a solid pharmaceutical care practice were discussed indirectly throughout the articles. No Brazilian publications were retrieved. Of the seven final texts, two were reviews, one was an article letter to a previous review, and four were critical analyses. No strong scientific evidence was found, and five articles were published between 2016 and 2017, which could be a consequence of the recent visibility and attention to transgender reality due to political and social framework changes.

All seven articles pointed out the role of clinical pharmacy practice in the pharmacist's expertise on transgender care. However, no specific pharmaceutical care method was mentioned. Instead, strategies like pharmacotherapy management and health education were suggested. A multi-professional and interdisciplinary

approach was recommended. According to the American Pharmacists Association - APhA (1995) pharmaceutical care should use a patient-centered approach. According to the APhA (1995) a respectful professional relationship must first be established. Second, medical information has to be shared throughout the team to allow patient data collection, organization, and registration. Then, it will be possible to evaluate drug therapy and develop a plan with the patient's collaboration. All supplies, information, and knowledge must be offered to the patient. Finally, pharmacists can provide follow-ups, reviews, monitoring, and, if necessary, modifications of therapeutic plans to guarantee the correct use of medicines. Thereafter, pharmacists will be able to improve positive clinical outcomes considering individual needs, economic profitability, and health-related quality of life. Figure 2 summarizes the main findings of the review.

Author, year	Country	Journal	Goal	Method	Results
Bishop, 2015	EUA	Pharmacotherapy	To present key information on transgender care.	Review	Pharmacists are essential on composition of transgender care teams, helping patients and families to rationalize and ensure correct use of drugs (hormone suppression, sexual reassignment), access, identification and management of adverse reactions, counseling and pharmacotherapeutic monitoring, health education, reduction of stigma and barriers to access health services. Pharmacists must consider appropriate clinical parameters to evaluate safety and therapy efficacy.
Leach, 2016	EUA	Pharmacotherapy	To comment previous article review (Bishop, 2015).	Article letter	Considering the lack of information, it is fundamental to know and use appropriate parameters to guarantee safety and therapy efficacy for transgender people.
Cocohoba, 2016	EUA	American Journal of Health-System Pharmacy	To discuss challenges and perspectives for pharmaceutical practice and research in transgender care.	Critical analysis	Pharmacists are essential in clinical services such as pharmacotherapeutic monitoring, therapy individualization, improving access to service and medication, therapy safety and efficacy, and on research conduction to guide better clinical decisions. It is important to address transgender health during professional development.

Author, year	Country	Journal	Goal	Method	Results
Knezevich, Viereck, and Drincic, 2012	EUA	Pharmacotherapy	To describe clinical methods on pharmacotherapy management and surgical interventions to sexual reassignment process.	Review	Pharmacists can contribute on the choice of most appropriate and cost-effective therapy, dosage optimization, rational use of medicines, monitoring and management of adverse effects, evaluation of drug interactions, health education, conciliation and pharmacotherapy follow-up. The professional must know the clinical protocols and parameters to guarantee safety and therapy efficacy.
Maxwell <i>et al.</i> , 2017	EUA	American Journal of Pharmaceutical Education	To identify pharmacist' role on LGBT health, therapy of gender transition, and discuss professional training.	Critical analysis	Pharmacists can contribute on transgender care through a respectful and sensitive practice, counseling, monitoring and management of pharmacotherapy, enabling correct access and use of hormones, and health education.
Nahata, Chelvakumar, and Leibowitz, 2017	EUA	Annals of Pharmacotherapy	To discuss challenges and controversies regarding pharmacological interventions in youth transgender care.	Critical analysis	Regarding scarce scientific relevant information on security and efficacy of hormones use, clinical pharmacists in a multiprofessional team can contribute on therapy selection and access, updating clinical protocols, evaluating therapeutic regimens, dosage, monitoring and caring.

Author, year	Country	Journal	Goal	Method	Results
Radix, 2017	EUA	American Journal of Health-System Pharmacy	To introduce opportunities for pharmacists acting on the care of transgender people.	Critical analysis (editorial)	Pharmacists can contribute monitoring pharmacotherapy of transgender people, therapy individualization, health education, review and analysis of associated risks of hormones use, research to stablish safety and efficacy of therapy. It is urgent to cover transgender health in pharmacy and postgraduate programs.

FIGURE 2 -



**Knezevich, Viereck, and Drincic (2012) were the first to discuss the pharmacist's role in transgender care. Their review described essential methods concerning pharmacotherapy and surgical interventions to provide effective treatment for gender identity disorder. In addition, protocols such as the WPATH Standards of Care, the Endocrine Society U.S. Clinical Practice Guidelines, and the Diagnostic and Statistical Manual of Mental Disorders feature opportunities for pharmacists' practice. In this scenario, the clinical pharmacy was elected as the main strategy to help patients in the rational use of hormones. According to Knezevich, Viereck, and Drincic (2012) pharmacists are capable of helping choose the most appropriate and cost-effective therapy, dosage optimization, and rational use of medicines, including hormones, the monitoring and management of adverse effects, drug interactions, health education, conciliation of medicines, and pharmacotherapy follow-up. They stressed the importance of continuous education and permanent improvement in this area and indicated that pharmacists could provide recommendations for clinical protocols and assist in correcting the interpretation of laboratory parameters to guarantee therapy safety and efficacy.**

Bishop (2015) mentioned the clinical pharmacy approach as a strategy to improve the lives of people who are transitioning (male to female or female to male). As stated by Bishop (2015) pharmacists shall provide recommendations on therapeutic agents and their dosages, helping identify and manage adverse effects. Professionals must understand the pharmacotherapeutic principles related to transition and improve the cultural competence to correct vocabulary use due to the vast number of terms and misconceptions against transgender people. Bishop (2015) mentioned other considerations besides hormone therapy. Considering their expertise on medication, Cocohoba (2016) listed some actions to pharmacists' practice. She mentioned that hormone use is a strategy that some transgender patients seek to promote changes and express their gender.

Counseling, monitoring, and management of medications and patient expectations were mentioned

as care strategies for pharmacists. The studies signaled that, although hormone therapy is safe for the cis community, higher doses are associated with increased risks of cardiovascular and metabolic conditions. Several collateral and adverse effects, especially during long hormone therapy, have been discussed in literature and protocols. Aspects concerning pharmacotherapy and its risks were particularly exposed by Knezevich, Viereck, and Drincic (2012) and Bishop (2015). All authors presumed that the role of pharmacists is to collaborate with the clinical decisions of physicians, helping patients understand risks and benefits associated with hormone therapy, understanding transgender treatment expectations, and promoting access to safe and effective therapy. They also stressed the associated risks of hormone therapy, including reduced bone mineral density, insulin resistance, weight gain, venous thromboembolism, hypertension, and laboratory parameter changes (LDL, HDL, triglycerides, etc.). All authors highlighted the professional commitment to evaluate the risks and benefits of hormones to each patient.

With respect to surgery interventions, Knezevich, Viereck, and Drincic (2012) and Bishop (2015) reviewed the main steps required to adjust personal gender and physical features. With regard to psychotherapy, hormones, and surgery, Knezevich, Viereck, and Drincic (2012) and Bishop (2015) exposed fundamental considerations prior to clinical decision. Treatment with hormones (antiandrogens, GnRH analogs, and estrogen or testosterone) is designed to promote body changes to masculinize or feminize the patient. Surgery has the main purpose of changing sexual characteristics. The method includes chest reconstruction, mammoplasty, orchiectomy, oophorectomy, total hysterectomy, penectomy, vaginoplasty, clitoroplasty, vulvoplasty, mastectomy, urethral reconstruction, phalloplasty, vaginectomy, and scrotoplasty. Moreover, hormone therapy and the post-surgery status might require pharmacist care. Because of this publication, Leach (2016) wrote a letter clarifying some notes exposed by Bishop (2015). Leach (2016) was especially concerned about the lack of information on clinical parameters (e.g., creatinine clearance) during follow-up. Because hormones can modify the lipid profiles (triglycerides,

LDL, HDL), fat distribution, and muscle mass, caution is essential before interpreting these parameters.

Gaps in healthcare access, social stressors, and the difficulty in finding unique professionals capable of understanding or being sensitive to transgender care were key obstacles to all studies included in this review. Cocohoba (2016) addressed the transgender profile in the United States of America. As the author reported, the transgender population was recently estimated at around 700,000 people in the United States only (calculated by the Williams Institute's survey in 2011). However, the author stressed that despite this expressive number of transgender people in the US, stigma and violence are still part of their social portrait. Bishop (2015) and Cocohoba (2016) agreed that this situation might contribute to healthcare access gaps and negatively impact social life and mental health. Maxwell *et al.* (2017) covered this topic from a personal experience with a classmate who felt unprepared to work with transgender people. They also recognized the social context regarding transgender life and its impact on the health of transgender people. Radix (2017) briefly introduced the life context and some key factors affecting transgender life. The author shared the same concern as most authors on this review: increased risks of depression, suicide, lack of access to healthcare services, tobacco use, and other disparities affecting transgender health. Agreeing with the studies mentioned in this review, Radix (2017) highlighted that transgender people are still vulnerable to discrimination and stigma. Additionally, the transgender population did not find enough competent professionals to deal with their needs. In another study, Radix (2017) signaled the importance of pharmaceutical clinical services, especially considering their strategic position in the community. This position was indicated by other authors in this review. All studies mentioned that pharmacists are as much capable of working with clinical pharmacy methods as helping decrease disparities and inequities. In addition, Radix (2017) highlighted the need for educational strategies to cover transgender health and the urgent need for research to contribute with studies on pharmacotherapy safety and effectiveness.

All authors in this review considered mental health, sexual health, and hormone use as challenges with which

pharmacists should be involved. Pharmacists should advocate and provide support to minimize discrimination, violence, and stigma in the transgender community with regard to mental health. Maxwell *et al.* (2017) indicated that the "minority stress" phenomena characterized by hostile social environments had promoted serious mental conditions. However, no specific interventions regarding how pharmacists directly contribute to mental health were identified. This perception suggests that pharmacists working with mental health have to consider a multi-professional approach. With regard to sexual health, pharmacists could improve access to prevention tools (vaccines and preservatives), education concerning sexually-transmitted infections (STIs), and required treatment. Cocohoba (2016) was especially concerned about difficulties to healthcare access and the higher impact of STIs on the LGBT community.

According to Nahata, Chelvakumar, and Leibowitz (2017) health professionals should also consider increased risks of school bullying and suicide affecting the transgender community. This consideration highlights the need for studies on the establishment of a specific age to start hormone therapy. Brazilian guidelines, such as Brasil (2013) proposes the minimum age of 18 years to start hormone replacement therapy. Nahata, Chelvakumar, and Leibowitz (2017) were the only to discuss the pharmacist's role in transgender youth care. As reported, some signs related to gender dysphoria may arise during adolescence. Then, young people may seek specialized care, including individual and family psychotherapy, psychotropic pharmacotherapy, voice modification strategies, and breast reduction or augmentation surgery to emphasize opposite-sex characteristics. They mentioned that, specifically for this population, gonadotropin-releasing hormone (GnRH) analogs are essential to suppress puberty events due to the sex assigned at birth. On the other hand, they also discussed controversies concerning GnRH use by transgender youth. Issues such as hiding conditions linked to delayed puberty, suppression of initial changes during puberty (essential to confirm gender dysphoria), and negative effects on future surgical interventions (insufficient penile tissue to vaginoplasty) must be considered prior to GnRH use.

Gaps and opportunities in scientific research were notably suggested by Cocohoba (2016). Like other authors in this review, Cocohoba positioned the pharmacist practice as a substantially-affecting factor in the transgender community. According to Maxwell *et al.* (2017) although pharmacists did not show enough confidence in the transgender approach, they play an essential role, especially in public health. Pharmacists strategically deployed in the community were considered one of the most trusted healthcare professionals and should act beyond medication dispensing and counseling. All authors, especially Maxwell *et al.* (2017) and Cocohoba (2016) also highlighted the need for these professionals to adjudicate insurance claims and provide information concerning illegal hormone purchase.

With regard to the lack of information on LGBT healthcare at pharmacy schools, Maxwell *et al.* (2017) and Cocohoba (2016) cautioned about the urgent need to cover this reality during professional education. To Cocohoba (2016) an adequate number of healthcare workers can promote significant changes in the transgender community. The author also stressed the importance of research and the need for training in research methods, postgraduate and residencies programs, and investments in scholarships and mentorship to encourage pharmacists to work in transgender health projects. Maxwell *et al.* (2017) and Cocohoba (2016) discussed the role of education, especially on transgender medicine, the hormone use context, and the importance of cultural training to work with their special needs. Maxwell *et al.* (2017) brought some examples of organizations such as The LGBT Health Education Center and the Fenway Institute, which have online tools to help students, professionals, and patients. Because transgender care is a reality, professionals need to be skilled to serve appropriately. Other authors, e.g., Nahata, Chelvakumar, and Leibowitz (2017) proposed efforts to discuss transgender phenomena on healthcare curriculum programs, research funding, and the development of policies and strategies to promote well-being.

## FINAL CONSIDERATIONS

One challenge during this review was the process of retrieving results. Because of the shortage of studies in this area, some platforms brought information that did not contemplate the research question and goal. Publications were retrieved simply because the authors were pharmacists or belonged to Pharmacy Schools. The lack of reports and experiences concerning pharmacists' practices in the transgender community should also be mentioned. No study presented real experiences, which made it impossible to measure the impact of these professionals on transgender care. The articles were mainly critical analyses about the potential gaps in the pharmacist's clinical practice. On the other hand, the studies also brought some reflections about pharmaceutical services beyond pharmacotherapy.

This review identified gaps and opportunities for pharmacists in transgender care. Contexts of stigma, violence, lack of access to healthcare services, and risks associated with hormones use were also exposed. All articles reported the social impact on transgender life. Moreover, health education and social advocacy were mentioned throughout the studies. The authors proposed that pharmacists play a significant role by ensuring efficacy and safety on gender dysphoria treatment, assisting in hormone choice by considering the needs and individuality of patients and cost-effective therapy. In addition, pharmacists are capable of reviewing clinical protocols and guidelines. Although the articles mostly focused on hormone therapy, pharmacists can also act by advocating to improve access to health services, pharmaceutical inputs, and health education.

Pharmacists are transformative social and clinical professionals. However, these observations were not prevalent in the studies, which could result from associating this professional with the context of medication use. Their mission needs to be included in an intersectoral performance, acting as mediators between other health professionals and patients. Health goes beyond models that prioritize the treatment and recovery of deviant conditions. Pharmacists are interdisciplinary agents that can promote health in the transgender community, playing a crucial role in the rational use of medicines and access to health care as a fundamental human right.



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