International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

# A Cross-Sectional Study on Awareness and Knowledge Amongst Physiotherapist Regarding Pelvic Floor Rehabilitation Post Gender Confirmation Vaginoplasty in Transgender Individuals

**Taniya R. Agrawal[1], Dr. Daniyal Thekiya[2]**

[1]Intern, Lokmanya Tilak College of Physiotherapy.
[2]Assistant Professor, Department of Community Physiotherapy, Lokmanya Tilak College of Physiotherapy.

**Abstract**

**Background**: Transgender individuals often undergo gender confirmation surgery (GCS), such as vaginoplasty, to align their physical body with their gender identity. Post-operative pelvic floor rehabilitation is crucial for improving quality of life, yet awareness and knowledge among physiotherapists remain underexplored. This study assesses the levels of awareness and knowledge among physiotherapists regarding pelvic floor rehabilitation post-vaginoplasty in transgender women.

**Methods**: This cross-sectional survey involved 155 physiotherapists recruited via snowball sampling. Participants completed a self-made, face-validated questionnaire via Google Forms, covering demographics, awareness (8 items), and knowledge (10 items) domains. Data were analysed using descriptive statistics (mean, median, mode) in MS Excel 2021.

**Results**: Participants (mean age 27.03 years; 75.5% female; 81% with Master's in Physiotherapy) showed moderate awareness of basic concepts like gender dysphoria (72%) and GCS (69%), but low familiarity with WPATH guidelines (14%), standards of care for post-operative rehabilitation (17%), and dilator therapy (27%). Knowledge gaps were evident in complications post-vaginoplasty (27% aware) and exercise protocols (45% knowledgeable). Significant misconceptions existed, such as overestimating DVT and infections as primary complications.

**Conclusions**: Physiotherapists exhibit substantial gaps in specialized knowledge for transgender pelvic floor rehabilitation, highlighting the need for targeted education to enhance inclusive care.

**Keywords**: Transgender, Vaginoplasty, Pelvic Floor Rehabilitation, Physiotherapists, Awareness, Knowledge

## 1. Introduction

Gender refers to a sociocultural expression associated with being man or a woman. Whereas, sex of a person refers to the genetically acquired and biologically defined difference between male and female. But, apart from the assigned male and female at birth there is a third gender which is the community of

individuals consisting of people who have gender dysphoria and are not satisfied by the gender assigned to them at birth, one such community is Transgenders. The term transgender is an umbrella term referring to individuals whose identity fall outside of the stereotypical norms of gender, or in simple words, those who do not identify with the assigned birth sex.[1] The World Health Organization considers same sex orientation as a normal variant of human sexuality.[2] Yet, there has been a repeated pattern of discrimination against Lesbians, Gay, Bisexual, Transgender, Queer, Intersex, Asexual and many more (LGBTQIA+) community within our society. This is a result of larger social changes that severely penalize people for not conforming to societal norms of gender. This causes both economic discrimination and violence against transgender individuals.[3]

The Indian court accepted transgender community in 2014 and then implemented it again in 2019, the court ordered non-discrimination, identification documentation, a transgender friendly equal opportunities policy, complaint investigators, welfare programs and most importantly medical facilities are all included. Transgenders, need medical attention too like all of the general population, some of them even need special attention as they undergo transition associated or gender asserting hospital treatment.[4]

Gender confirmation surgery (GCS) which is also known a gender affirmation surgery is a surgery Which helps transgenders align their physical body with their gender identity.[5] There are many types of gender confirmation surgeries including facial reconstructive surgery, chest surgery and genital surgery. One such surgery, for transgender individuals assigned male at birth is vaginoplasty. It is a form of plastic surgery which involves creation of a vagina, clitoris, labia Majora and minora following the protocols laid by World Professional Associations of Transgender Health (WPATH). This surgery can be performed in three ways (1) penile inversion vaginoplasty, (2) intestinal transplantation and (3) non genital flap.[6]

Vaginoplasty in transgender individuals has said to provide (93%) of overall satisfaction with (87%) functional outcomes, aesthetic outcomes (90%) and sexual outcomes of (70%) showing GCS can significantly improve quality of life and improve overall well-being of the transgender individual.[7] It also has a unique consideration and challenge, especially with pelvic floor health. It is believed that individuals who have undergone physiotherapy at least once post operative have a significant better quality of life and much less chances of vaginal dilation and vaginal stenosis.[8]

One of the essential aspects of post-operative care after vaginoplasty is rehabilitation of the pelvic floor. The pelvic floor functions to support the abdominal viscera, maintaining bowel and bladder continence and helps with functions such as voiding, defecation, sexual activity and child birth.[9] Weak, strained or overly tight pelvic floor can lead to dysfunction of the pelvic floor muscles including pelvic pain, incontinence, sexual dysfunction and pelvic organ prolapse.[8]

Therefore, pelvic floor rehabilitation is one of the most important topics when it comes to women's health and yet, it remains an unexplored and often overlooked aspect in the field of physiotherapy.

Post any pelvic surgery, there is a need for the patient to undergo rehabilitation of pelvic floor which typically includes activation of pelvic floor muscles, pelvic floor muscle training (contract relax method, quick contractions, "elevator exercises"), Kegel's exercises, Reverse Kegel's and activation of transverse abdominis muscle.[10]

But when it comes to GCS and vaginoplasty there is a need for specific rehabilitation of transgender Individuals post-surgery. The most important and foremost is education on the use of dilators in accordance with the guidelines laid by World Professional Association for Transgender Health (WPATH), Bowel retraining using motor control training, manual therapy, visceral mobilization and bowel education. The other aspects of rehabilitation program include management of pain, management of scar and

flexibility and strength training. This need is not widely addressed in clinical practice in the field of women's health and hence it should be paid more attention to.[6]

Understanding the level of awareness and knowledge amongst physiotherapist especially women's health physiotherapist regarding rehabilitation of pelvic floor muscles after GCS is essential in improving quality care to this population. Physiotherapist are key healthcare providers in recovery and rehabilitation process post Gender confirmatory vaginoplasty surgery, yet their training, knowledge and cultural beliefs may vary significantly while addressing the unique needs of transgender Patients.

This study helps to explore the stance of physiotherapist on rehab of pelvic floor muscles for transgender individuals post gender confirmation surgery. By assessing their awareness and knowledge, we seek to target opportunities for improving training, education and support in this area of transgender healthcare. Finally, this research aims to develop a more inclusive and effective strategies for transgender community undergoing the gender confirmation surgery.

## 2. MATERIALS AND METHODS

This online cross-sectional survey targeted clinical physiotherapists with at least 1.5 years of experience, pursuing or holding a Master's degree, practicing in clinical, hospital, or institutional settings. Exclusion criteria included students, interns, those unwilling to participate, or without consent.

Snowball sampling was used, with the questionnaire circulated via social media groups from March 2025 to August 2025. Sample size was 155 (from 170 screened participants). Materials included Google Forms, a self-made questionnaire, laptop, consent forms, and information sheets.

The questionnaire comprised demographics (name, age, gender, email, experience, qualifications, specialization), awareness (8 items on gender dysphoria, GCS, pelvic floor impacts, WPATH guidelines, etc.), and knowledge (10 items on sexual function, exercise protocols, complications, dilator therapy, etc.). Responses were voluntary and confidential.

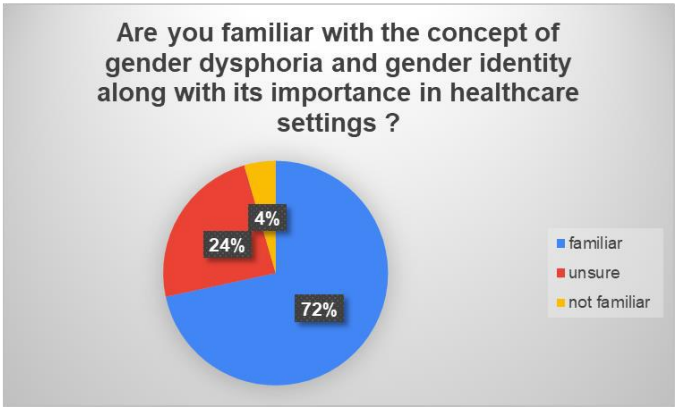
Clearance was obtained from the institutional ethics committee. Eligible participants (n=155) provided consent and completed the survey. Data were stored in MS Excel 2021.

## 3. Data Analysis

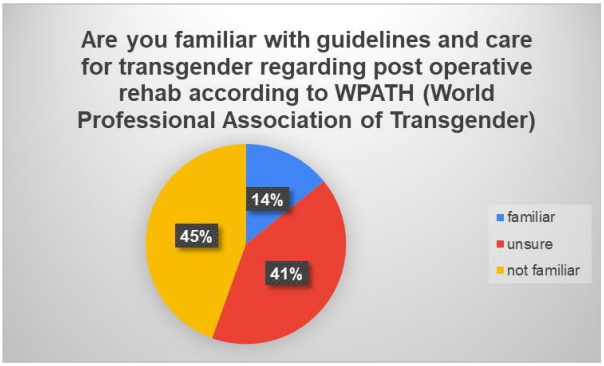
Data analysis was performed using descriptive statistics (mean, median, mode) in MS Excel 2021. Pie charts and tables visualized demographics, awareness, and knowledge responses.

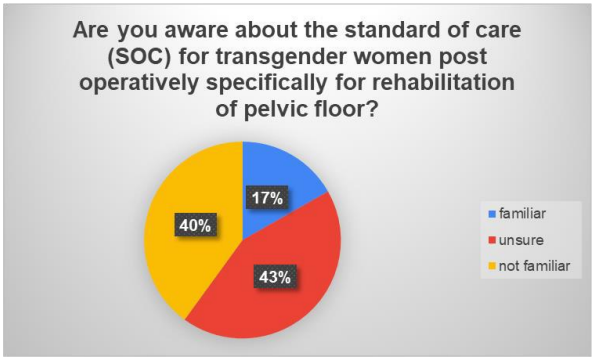
## 4. Results and Statical Analysis

A total of 155 participants (mean age 27.03 years; 75.5% female; 24.5% male) were included. Qualifications: 19% Bachelor's, 81% Master's. Experience: 79% 1.5–4 years, 11% 4–6 years, 3% 6–8 years, 7% ≥8 years. Specializations: varied across community health, neuro, cardiovascular/respiratory, musculoskeletal, and others.

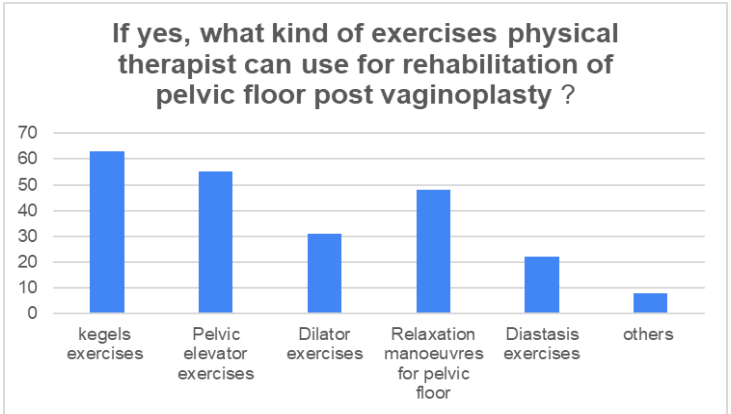



The pie chart (01) shows that 72% participants are aware with the concept of gender dysphoria and gender identity, 24% are unsure about it and only 4% are not familiar about the concept of gender dysphoria and gender identity. Similarly, 69% of subjects were aware about GCS; it was observed 54% of subjects were aware with different surgery types for transgenders; 47% of participants were familiar with potential impact of gender affirming surgery on pelvic floor function and rehabilitation; 85% of the participants were aware with general protocols followed post-pelvic floor surgery and its rehabilitation; only 14% of the subjects were aware with guidelines set by WPATH (Pie chart 02) and 17% of the participants were familiar with standards of care set by WPATH (Pie chart 03).



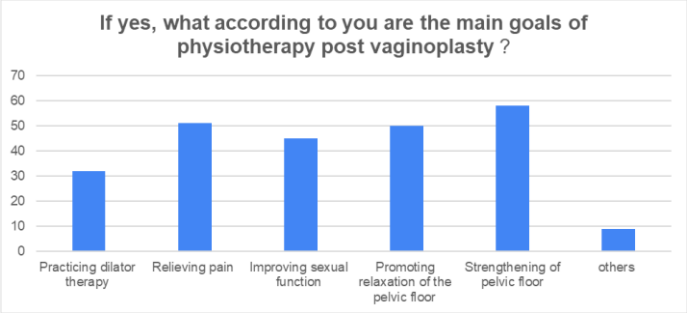




In the knowledge section it is observed as 57% of participants knew physiotherapy addresses sexual function; among them, varied timelines for resuming sexual activities were given out of which, 38 respondents believed it can be started after 8 weeks, while 33 respondents believed after 12 weeks and 18 participants believed after 4 weeks.



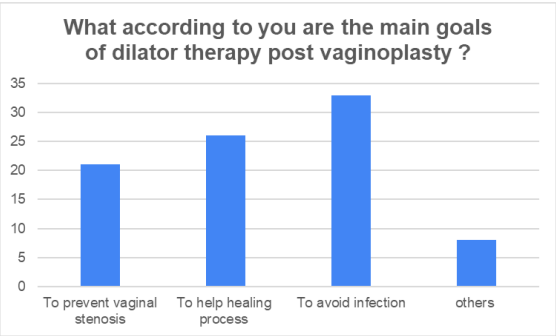
The 45% claimed to be knowledgeable about the exercise protocols to be followed post vaginoplasty but when asked about main exercises, 90.64% responded with Kegel's exercises, 86.27% pelvic elevators exercises, and 44% with dilator therapy and few with relaxation maneuvers and exercise for diastasis recti. (Chart 01)

The 27% participants who were aware and had knowledge about complications faced by transwomen post vaginoplasty were asked what according to them was the most common complication faced by transwomen, 43% (18 respondents) suggested introital stenosis/vaginal stenosis was most common, 67% (28 participants) suggested uterovaginal prolapse, 81% (34 participants) suggested nerve damage is the main complication, a whopping 90% (38 participants) suggested DVT can also be the major complication. 92% (39 respondents) added infection to the list of main complication and 79% (33 respondents) suggested haemorrhage.




The 43% respondents who had knowledge about goals of physiotherapy post vaginoplasty, 47% (32 respondents) suggested practicing dilator therapy is one of the main goals, 76% (51 respondents) suggested relieving pain as main goal, 67% (45 participants) suggested improving sexual function is the main goal. 75% (50 subjects) suggested relaxing the pelvic floor as main goal of physiotherapy. 86% (58 subjects) added strengthening of pelvic floor as the major goal of physiotherapy. (Chart 02)

The 27% respondents who had knowledge about the use of dilator therapy for transwomen, only 50% (21 respondents) were able to answer the correct use of dilator therapy is to prevent vaginal stenosis, 54% (23 subjects) suggested it aids in healing process, 76% (36 subjects) suggested it helps to avoid infection. (Chart 03)




## 5. Discussion

The transgender community has long faced judgment, bias, and obstacles to healthcare, as demonstrated by constant instances of economic and physical discrimination resulting from non-conformity to conventional gender norms (Lombardi et al., 2002). In recent years, societal transformations have undertaken to tackle these concerns, including legal recognitions in India in 2014 and 2019 that require non-discrimination, identifying documents, and medical services for transgender individuals (Farzana et al., 2023). This study attempted to evaluate the awareness and knowledge of physiotherapists concerning pelvic floor

rehabilitation after gender confirmation vaginoplasty in transgender women, Pelvic floor rehabilitation is an essential component of postoperative care that aligns the physical body with gender identity and enhances quality of life (Schechter, 2016; Dy et al., 2019).

In this cross-sectional survey of 155 physiotherapists (mean age 27.03 years, 75.5% female, 81% with MPTh qualifications) were taken in to consideration. The research results showed significant discrepancies in specialized areas but a moderate baseline understanding of basic concepts like gender dysphoria (72% aware) and GCS (69% aware). For example, just 17% of the participants knew the Standards of Care (SOC) for transgender women after GAS, and only 14% were aware of WPATH recommendations. Kuswaha et al. (2022) found that 85% of physiotherapy students, interns, and practitioners in Gujarat, India, had not been taught vaginoplasty management in their curricula. Moreover, in the present study, 68% of the participants were not aware of postoperative complications, and 63% were not familiar with transgender pronouns. These findings coincide with those of Kuswaha et al. (2022). Comparably, although 85% of participants in our survey were familiar with general pelvic floor rehabilitation following pelvic surgery, only 47% were aware of the effects of GCS on pelvic floor function. This indicates a gap between general women's health knowledge and transgender-specific applications.

Knowledge gaps were even more pronounced in practical domains. Only 27% of respondents in the present study knew about complications post-vaginoplasty, complications such as neovaginal stenosis, infections, and urinary issues, which occur in 15–32% of cases (Schardein et al., 2019). Among those aware, misconceptions were evident, with 90% citing DVT and 93% infections as common complication in the study presented, though Schardein et al. (2019) emphasize that wound dehiscence and stenosis are more prevalent, requiring vigilant rehabilitation to prevent. Dilator therapy, essential for maintaining vaginal depth and width starting 7–10 days post-surgery and continuing for at least a year (Jiang et al., 2019), was known to only 27% which was shown in our study, with half of those correctly identifying its role in preventing stenosis. This is concerning, as Jiang et al. (2019) demonstrated in a single-institution study of 77 vaginoplasty patients that pelvic floor physical therapy (PFPT) attendance (94%) significantly reduced postoperative dysfunction, improving dilation ease, pain reduction, and sexual function. Our respondents' knowledge of exercise protocols (45%) focused on standard interventions like Kegel's (90%) and pelvic elevators (79%), but underutilized dilators (47%), aligning with the Philippine Physical Therapy Association's (2024) findings on pelvic floor management in women, where individualized exercises like Kegel's and core strengthening were emphasized but not tailored to transgender needs.

The main goals of PFPT post-vaginoplasty—strengthening pelvic floor muscles (87% cited), pain relief (76%), and sexual function improvement (67%)—were known to only 43%, Similar with those of Gupta (2022), who noted that gender affirmation therapies in India aim for "congruence in self-image and expression," yet physiotherapists often lack training for transgender patients' unique needs, leading to suboptimal care. The WPATH SOC-8 emphasizes multidisciplinary approaches, including PFPT, for optimal outcomes (Coleman et al., 2022,). However, our study shows low awareness (14%) suggests educational disconnects, particularly among early-career professionals (79% with <4 years' experience), this mirrors institutional gaps where targeted training enhances competence (Jiang et al., 2019).

These deficiencies may stem from curricula limitations, as seen in Kuswaha et al. (2022), where 88% desired further knowledge, similar to our implied need for education. Negative experiences reported by transgender individuals in therapy due to insensitivity (Gupta, 2022) underscore the urgency for inclusive training. Integrating transgender health into physiotherapy education could improve outcomes, as PFPT programs have shown strong support for recovery (Jiang et al., 2019; Schardein et al., 2019).

Overall, while basic awareness exists, specialized knowledge is deficient, potentially compromising care quality for transgender patients undergoing vaginoplasty, who report 93% overall satisfaction but require tailored rehabilitation to address pelvic floor challenges (Dy et al., 2019).

## 6. Conclusion

In conclusion, this cross-sectional study highlights significant gaps in physiotherapists' awareness and knowledge regarding pelvic floor rehabilitation following gender confirmation vaginoplasty in transgender women, even though they generally understand ideas like gender dysphoria (72%) and pelvic floor help after pelvic surgeries (85%). Certain areas, like knowing about WPATH rules (14% aware), understanding problems after vaginoplasty (27% knowledgeable), and knowing about dilator therapy (27% knowledgeable), showed big problems. These gaps in knowledge may make it harder to give good and inclusive care for this group that is often not treated fairly.

## 7. Clinical Implications

The results from this research show clear gaps in how much physical therapists know and understand about pelvic floor help after gender affirmation vaginoplasty in transgender people. In practice, this shows that we need better training programs to prepare physical therapists, especially those who focus on women's health and pelvic floor care, with specific knowledge about transgender healthcare. For example, only 14% of people knew about WPATH guidelines, and only 27% understood dilator therapy, which is important for preventing vaginal stenosis and making postoperative results better, like sexual performance and overall life quality. Making continuing education courses mandatory that focus on transgender healthcare may fix these gaps, leading to more effective teamwork across different fields that includes physical therapists in both pre- and postoperative care. This could lower the number of problems like pelvic floor dysfunction, incontinence, and pain, as shown by previous studies that found better dilation success and fewer pelvic issues among patients getting pelvic floor physical therapy (PFPT). Also, promoting cultural competence—including knowing how to use correct pronouns and understanding ethical issues (with only 23% knowing about relevant laws)—may create more inclusive places, reducing barriers to care and increasing patient trust and adherence. Overall, adding transgender-specific guidelines to clinical practice standards may improve healthcare equity, patient satisfaction, and lasting well-being among this underserved group, potentially lowering rates of postoperative problems reported in 15–32% of vaginoplasty procedures.

## 8. Limitations

The study's sample size (n=155) and possible bias in choice limit its potential for generalization because participants were likely from a particular institution or location. The results may be skewed toward lower knowledge levels and not reflect senior practitioners due to the mean age (27 years) and the prevalence of early-career professionals (79% with 1.5–4 years' experience). Response bias is brought about by self-reported data, as participants may overestimate or underestimate their level of awareness. The survey's scope was limited because it didn't examine actual clinical procedures or obstacles to learning. Lastly, the effect on patient care is inferred rather than quantified in the absence of longitudinal follow-up. To validate these opinions, future studies should use larger, more varied samples and impartial evaluations.

## 9. Acknowledgement

First and foremost, I would like to thank Almighty God without whose blessings this research would not have been possible. It is my pleasure to acknowledge the roles of several individuals who were instrumental for completion of my research. I wish to express my sincere thanks to my college Principal, Dr. Pranjal Grover for granting me the permission to carry out this research and providing me with all the necessary facilities. It is a genuine pleasure to express my deep sense of thanks and gratitude to my guide, Dr. Daniyal Thekiya (PT). His dedication and keen interest in helping his students have been a factor responsible for completing my research work. His timely advice and scientific approach have helped me to a great extent to accomplish this task. I owe a deep sense of gratitude to Dr. Daniyal Thekiya (PT) for his constant encouragement. I take this opportunity to thank profusely all the faculty members of the Department of Physiotherapy of my college for their help and encouragement throughout my study period. My deepest appreciation with the greatest debt of gratitude belongs to my father Mr. Radheshyam Agrawal and mother Mrs. Savita Agrawal for their patience, unceasing support and encouragement. I would also like to thank my brother Mr. Varun Agrawal for being a pillar of strength throughout. I would like to thank all the participants who volunteered for the research project for their cooperation. Lastly but not the least, I want to dedicate my study to "to the individuals who have struggled to be themselves and those who have helped them". Changes make things possible.

## 10. References

1. Buck DM. Defining transgender: What do lay definitions say about prejudice. Psychology of sexual Orientation and Gender Diversity. 2016 Dec;3(4):465.
2. World Health Organization. International Classification of Disease 10: Classification of Behavioural and Mental Disorders. Geneva: WHO, 1992.
3. Lombardi, E. L., Wilchins, R. A., Priesing, D., & Malouf, D. (2002). Gender Violence: Transgender Experiences with Violence and Discrimination. Journal of Homosexuality, 42(1), 89–101. https://doi.org/10.1300/J082v42n01_05
4. Farzana, Mariyam & Munshi, Dhwani & T N, Suresh & Mathew, Ashish & A++, T & Ghugare, Dwijesh. (2023). A Perspective of Physiotherapists 'cognizance on Trans Wellness. 10.9734/bpi/rtass/v6/6667A.
5. Miriam Hadj-Moussa, Dana A. Ohl, William M. Kuzon, Feminizing Genital Gender-Confirmation Surgery, Sexual Medicine Reviews, Volume 6, Issue 3, July 2018, Pages 457–468.e2,
6. Schechter LS (2016) Gender confirmation surgery: an update for the primary care provider, Transgender Health 1:1, 32–40, DOI: 10.1089/trgh.2015.0006
7. Dy GW, Nolan IT, Hotaling J, Myers JB. Patient reported outcome measures and quality of life assessment in genital gender confirming surgery. Transl Androl Urol. 2019;8(3):228-240. doi:10.21037/tau.2019.05.04
8. Jiang, Da David & Gallagher, Sandra & Burchill, Laura & Berli, Jens & Dugi, Daniel. (2019). Implementation of a Pelvic Floor Physical Therapy Program for Transgender Women Undergoing Gender-Affirming Vaginoplasty. Obstetrics & Gynecology.133.1.10.1097/AOG.0000000000003236.
9. Muro, Satoru & Akita, Keiichi. (2023). Pelvic floor and perineal muscles: a dynamic coordination between skeletal and smooth muscles on pelvic floor stabilization. Anatomical science international. 98. 10.1007/s12565-023-00717-7.

10. Okeahialam, Nicola & Dworzynski, Katharina & Jacklin, Paul & Mcclurg, Doreen & Reed, Phil. (2022). Prevention and non-surgical management of pelvic floor dysfunction: summary of NICE guidance. BMJ. 376. 10.1136/bmj.n3049.
11. Tsang S, Royse C, Terkawi A. Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. Saudi Journal of Anaesthesia [Internet]. 2017 Jan 1;11(5):80. Available from: https://doi.org/10.4103/sja.sja_203_17
12. Kuswaha, Ansu & Trivedi, Jainil & Sheth, Shivani. (2022). Awareness among Physiotherapy Students, Interns, and Clinical Practitioners of Gujarat regarding Care of Transgender People after Gender Affirmation Surgery. International Journal of Science and Research (IJSR). 11. 10.21275/SR221028124135.
13. Schardein JN, Zhao LC, Nikolavsky D. Management of Vaginoplasty and Phalloplasty Complications. Urol Clin North Am. 2019 Nov;46(4):605-618. doi: 10.1016/j.ucl.2019.07.012. Epub 2019 Aug 31. PMID: 31582033
14. Association, P. (2024). Philippine Physical Therapy Association Convention 2023 Conference Abstracts: Platform Presentations. *Philippine Journal of Physical Therapy, 3*(1), 31-42. Retrieved from https://soar.usa.edu/phjpt/vol3/iss1/5
15. Gupta, Richie. (2022). Gender Affirmation in India—The Current State of Knowledge, Management, Legal and Legislative Situation. Indian Journal of Plastic Surgery. 55. 10.1055/s-0041-1740528.