COLPOSCOPIC ACCURACY OF FELLOWS-IN-TRAINING IN THE DIAGNOSIS OF PREMALIGNANT AND MALIGNANT CERVICAL LESIONS IN PATIENTS REFERRED TO THE COLPOSCOPY UNIT OF PHILIPPINE GENERAL HOSPITAL: A 3-YEAR RETROSPECTIVE STUDY

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INTRODUCTION & SIGNIFICANCE

Cervical cancer is the second leading cancer among women in the Philippines.[1-2] The long premalignant phase allows for early detection; however, screening coverage remains low, contributing to high morbidity & mortality.[3]

Colposcopy is an invaluable tool in the detection of premalignant and malignant cervical lesions. Despite its importance, it is highly operator-dependent, with reported concordance as low as 30%.[4-6]

In tertiary centers such as the Philippine General Hospital, colposcopy is performed by fellows-in-training, highlighting the need to evaluate diagnostic performance within a training environment.

OBJECTIVES

The study aims to evaluate the colposcopic accuracy of fellows-in-training in diagnosing premalignant & malignant cervical lesions. Specifically, it aims to:

- Determine concordance between colposcopic diagnosis and histopathologic diagnosis
- Determine sensitivity, specific, PPV, NPV in the diagnosis of cervical lesions
- Determine if colposcopist experience affect concordance
- Identify factors associated with accuracy
- Determine predictive value of colposcopic features

METHODOLOGY

Design	Retrospective cross-sectional study
Setting	Colposcopy unit of Philippine General Hospital
Period	January 1, 2022 - December 31, 2024
Participants	320 patients with complete colposcopic and histopathologic data
Operators	Fellows-in-training: Junior (2nd year) & Senior (3rd year)
Gold Standard	Histopathologic diagnosis
Analysis	Descriptive statistics, diagnostic accuracy measures, kappa statistics, logistic regression

PATIENT PROFILE (n = 320)

Mean age: 44.22 years (± 12.23)

Premenopausal: 76.88%

No prior Pap smear: 59.06%

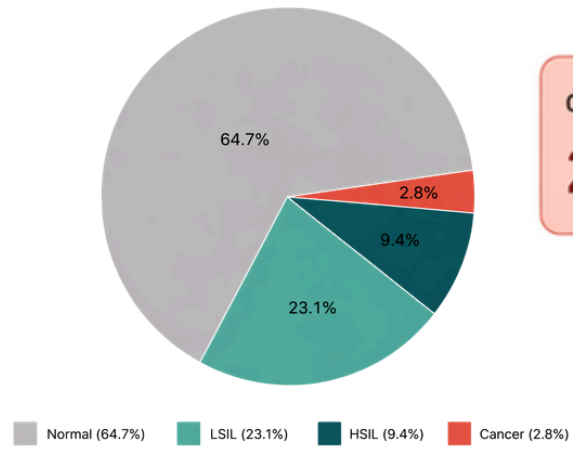
No HPV testing: 81.25%

TOP REFERRAL REASON

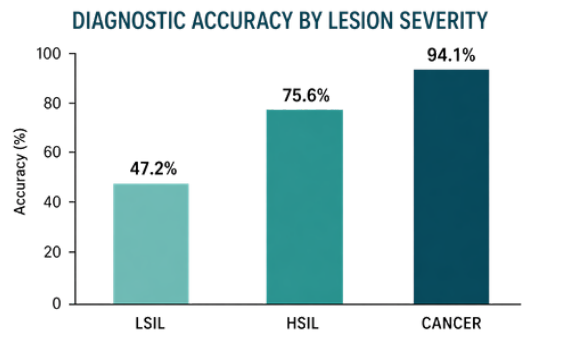
Suspicious cervix: 50.63%

RESULTS

Histopathologic Outcomes



CONCORDANCE	OVERDIAGNOSIS	UNDERDIAGNOSIS
27.2%	68.1%	4.7%



SENSITIVITY, SPECIFICITY, PPV AND NPV

Lesion	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
LSIL	74.3	39.0	26.8	83.5
HSIL	60.0	77.2	21.4	94.9
Cancer	55.6	95.2	25.0	98.7

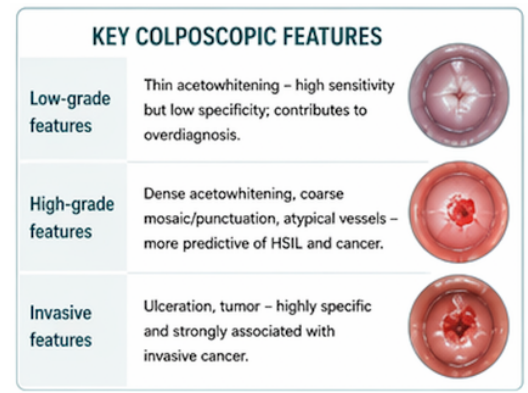
Junior vs Senior Fellow (Concordance)

Junior Fellows 26.5% VS Senior Fellows 28.9%

No significant difference (p=0.669)

KEY COLPOSCOPIC FEATURES

Low-grade features	Thin acetowhitening – high sensitivity but low specificity; contributes to overdiagnosis.
High-grade features	Dense acetowhitening, coarse mosaic/punctuation, atypical vessels – more predictive of HSIL and cancer.
Invasive features	Ulceration, tumor – highly specific and strongly associated with invasive cancer.



DISCUSSION

Overall concordance between colposcopic impression and histopathology was low (27.2%), with overdiagnosis predominating (68.1%). This pattern likely reflects a safety-first approach, where trainees prioritize sensitivity to avoid missing significant disease.

Diagnostic performance improved with increasing lesion severity, with the highest accuracy in invasive cancer (94.1%). High NPV across all categories (>80–98%) indicates that colposcopy is more reliable as a rule-out tool than as a confirmatory test.

Senior fellows performed better in detecting high-grade lesions and cancer, though overall differences were not statistically significant. HPV positivity trended toward improved accuracy, while more biopsies were associated with lower concordance. Demographic factors were not significantly associated with accuracy.

CLINICAL & TRAINING IMPLICATIONS

Strengthen structured colposcopy training

Emphasize pattern recognition of high-grade features

Integrate HPV-based screening strategies

Use of image-based learning & simulation

CONCLUSION

Colposcopy performed by fellows-in-training demonstrates modest concordance with histopathology but high negative predictive value, making it a useful tool for excluding disease. Overdiagnosis is common and reflects a protective diagnostic approach. Accuracy improves with lesion severity, underscoring the need for structured training and integration of adjunctive technologies to enhance colposcopic performance and cervical cancer detection.

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No conflicts of interest

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