



Role of Using a Questionnaire to Screen Adolescent Endometriosis

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Abstract

Adolescent endometriosis is an underdiagnosed yet debilitating condition affecting many young individuals during their formative years. The critical role of early diagnosis cannot be overstated, as delayed intervention can lead to severe consequences, including progression of the disease, chronic pain, and compromised fertility. In light of the limitations of invasive diagnostics like laparoscopy, symptom-based screening questionnaires have emerged as a promising, cost-effective, and non-invasive tool. This article delves into the utility, benefits, limitations, and potential future directions of screening questionnaires in addressing diagnostic delays, emphasizing their role in transforming adolescent gynecological care.

Introduction

Endometriosis affects approximately 10% of reproductive-age females, with symptoms often surfacing during adolescence. Despite this prevalence, societal normalization of menstrual pain frequently results in diagnostic delays spanning 6–10 years, a gap that often exacerbates disease severity and adversely impacts the quality of life. These delays stem from reliance on invasive methods such as laparoscopy for definitive diagnosis, a process inaccessible to many adolescents due to its costs, risks, and resource demands.

Symptom-based questionnaires offer a less invasive alternative, serving as an initial step to identify adolescents at high risk. While these tools do not replace clinical diagnosis, they streamline referrals and facilitate earlier intervention. This review aims to provide a comprehensive analysis of their role, contextualizing their potential within broader healthcare and technological trends.

Clinical Presentation of Adolescent Endometriosis

Endometriosis in adolescents often manifests differently than in adults, with more diffuse or ambiguous symptoms. Hallmarks include:

- **Dysmenorrhea and Chronic Pelvic Pain:** Recurrent, severe menstrual cramps and non-cyclic pelvic pain significantly impact daily functioning.
- **Gastrointestinal Symptoms:** Bloating, nausea, and bowel irregularities often mimic irritable bowel syndrome, complicating diagnosis.
- **Subfertility Risk:** Although uncommon in adolescence, early endometriosis can lay the foundation

for future fertility challenges.

These symptoms, compounded by the normalization of menstrual pain, often result in dismissals or misdiagnoses, underscoring the necessity of alternative diagnostic approaches.

Mechanics and Clinical Role of Screening Questionnaires

Symptom-based screening questionnaires assess various indicators, including pain severity, cyclical patterns, family history, and interference with daily life. The **Endometriosis Screening Questionnaire (ESQ)** and similar tools use scoring systems to stratify risk, assisting clinicians in determining the need for further evaluation.

- **Formats:** Paper and digital versions expand accessibility, with digital formats enabling seamless integration into telemedicine platforms.
- **Validation:** Rigorous clinical validation ensures questionnaires achieve sensitivity (ability to detect true positives) and specificity (ability to rule out false positives).

By simplifying initial evaluations, questionnaires empower healthcare providers to prioritize high-risk adolescents for further testing or interventions.

Parameter	Laparoscopy (Gold Standard)	Screening Questionnaires
Invasiveness	Invasive, requiring surgical intervention	Non-invasive
Accuracy	Highly accurate; provides definitive diagnosis	Moderate; depends on symptom reporting
Cost	High; includes surgical, anesthesia, and hospital fees	Low; inexpensive to implement
Feasibility	Requires specialized equipment and expertise	Easy to administer in various settings
Time to Diagnosis	Delayed; often used after years of symptoms	Speeds up referrals and prioritization
Patient Comfort	Potential physical and emotional distress	Minimal discomfort
Population Reach	Limited to healthcare facilities with resources	Broad, including underserved areas
Utility in Early Screening	Not suitable for routine early screening	Suitable for early identification

Table 1: Comparative Analysis of Diagnostic Methods for Adolescent Endometriosis

Feature	Description
Symptoms Assessed	Dysmenorrhea, chronic pelvic pain, gastrointestinal symptoms, fatigue, family history, menstrual patterns
Formats Available	Paper-based, digital, mobile app-based
Scoring System	Quantifies symptom severity and stratifies risk
Accessibility	Available in multiple languages and customizable for cultural context
Validation	Clinically validated for sensitivity and specificity
Integration	Can be integrated into telemedicine platforms for remote screening
Limitations	Subjectivity in symptom reporting, cultural barriers, symptom overlap with other conditions

Table 2: Key Features of Screening Questionnaires in Adolescent Endometriosis

Table 3: Symptom Prevalence in Adolescent Endometriosis

Symptom	Prevalence
Dysmenorrhea	Very common; hallmark symptom
Chronic Pelvic Pain	Common; impacts daily functioning
Gastrointestinal Symptoms	Moderate; often mimic irritable bowel syndrome
Subfertility Risk	Rare in adolescence but foundational for future fertility issues

Table 4: Advantages and Limitations of Screening Questionnaires

Aspect	Details
Advantages	
Non-Invasiveness	No need for surgical or imaging evaluations
Affordability	Cost-efficient compared to invasive diagnostic methods
Early Detection	Facilitates timely medical management to delay progression
Accessibility	Standardized formats support implementation in diverse clinical settings

Aspect	Details
Empowerment	Promotes menstrual health awareness, reducing stigma
Limitations	
Symptom Overlap	Similarities with PCOS or IBS can lead to misclassification
Subjective Reporting	Challenges in symptom articulation among adolescents
Cultural Barriers	Limited adoption in regions with healthcare stigma
False Positives/Negatives	Risks of unnecessary anxiety or overlooked cases

Table 5: Future Directions for Screening Questionnaires

Innovation	Description	Potential Impact
AI-Powered Questionnaires	Adaptive tools refining responses based on patterns	Enhances precision and reduces false outcomes
Cultural Adaptations	Localization with language and cultural context	Expands accessibility in diverse regions
Mobile Integration	Use in smartphone applications	Improves adoption in underserved communities
Longitudinal Studies	Impact Tracking patients over time	Demonstrates sustained improvements in outcomes
Community Education	Campaigns addressing stigma and promoting menstrual health awareness	Encourages proactive healthcare-seeking behavior

Benefits of Screening Questionnaires

Screening questionnaires offer transformative potential for adolescent endometriosis care:

- 1. Non-Invasiveness:** Eliminating the need for surgical evaluation reduces risks, especially for younger patients.
- 2. Affordability:** These tools are cost-efficient, alleviating financial burdens for families and healthcare systems.
- 3. Early Detection:** Timely identification of at-risk individuals enables medical management to delay disease

progression.

4. Accessibility: Standardized formats ensure consistent care delivery across varied clinical settings.

5. Empowerment Through Awareness: Questionnaires encourage adolescents and families to better understand menstrual health, reducing stigma.

Evidence Supporting Effectiveness

Clinical research supports the predictive validity of questionnaires in screening for adolescent endometriosis.

Notably:

- Studies reveal that severe dysmenorrhea captured in screening tools is a robust predictor of laparoscopically confirmed endometriosis.
- Integration of such tools in routine gynecological care has reduced referral times and expedited medical interventions.

Comparisons between questionnaire findings and surgical outcomes underscore the importance of tailored, symptom-based approaches.

Challenges and Limitations

Despite their promise, screening questionnaires face notable barriers:

1. **Symptom Overlap:** Similarities with conditions like polycystic ovary syndrome (PCOS) or irritable bowel syndrome (IBS) can lead to misclassifications.
2. **Subjective Reporting:** Adolescents may struggle to articulate symptoms due to limited health literacy or discomfort discussing menstrual health.
3. **Cultural and Socioeconomic Barriers:** In some regions, stigma and limited healthcare infrastructure hinder implementation.
4. **False Positives/Negatives:** Over-reliance on questionnaires without follow-up diagnostic processes can result in unnecessary anxiety or overlooked cases.

Efforts to overcome these challenges are critical for the global success of screening initiatives.

Future Directions

The evolution of symptom-based screening tools lies in technological, cultural, and methodological advancements:

1. **AI-Powered Questionnaires:** Artificial intelligence (AI) can dynamically adapt questionnaires based

on user responses, improving precision and reducing false outcomes.

2. **Cultural Adaptations:** Region-specific tools incorporating local languages and cultural norms will expand accessibility.
3. **Mobile Integration:** Telemedicine platforms and smartphone applications enable broader adoption, particularly in underserved communities.
4. **Longitudinal Impact Studies:** Tracking outcomes over time will establish the long-term value of questionnaire-based screening in improving patient trajectories.

Moreover, community education campaigns about endometriosis and menstrual health can complement these tools, addressing stigma and encouraging proactive healthcare-seeking behavior.

Conclusion

Screening questionnaires represent a pivotal shift in adolescent endometriosis care, bridging the gap between symptom onset and formal diagnosis. Their non-invasive, cost-effective nature makes them indispensable in resource-limited settings, while advancements in AI and digital health will further refine their utility.

By promoting early detection and awareness, these tools pave the way for a more informed and proactive approach to managing adolescent endometriosis. As the healthcare landscape evolves, screening questionnaires will play an increasingly central role in empowering young individuals to achieve better health outcomes and reclaim their quality of life.

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