



Commentary

Garg Incontinence Scores: A Paradigm Shift in Assessing Fecal Incontinence

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Fecal incontinence (FI) is common, and as per the estimates, it affects up to 15% of the population.^[1-6] The common causes include perianal tears after obstetric injuries, post-anal surgery, especially after anal fistula surgery, post-radiotherapy, etc. Undoubtedly, FI causes immense physical, mental, and emotional turmoil in the sufferer's life. Regrettably, the assessment and treatment of FI remain unsatisfactory, revealing a notable gap that necessitates substantial advancements in this domain.

The clinical evaluation of FI is the first step in its management. Considering the diverse forms of FI, such as solid, liquid, flatus, etc., an objective clinical evaluation becomes imperative. To fulfill this objective, several scoring systems have been in vogue for the last three decades.^[7-9] The first scoring system in this regard was Cleveland Clinic or Wexner scoring system.^[7] It was published by Jorge and Wexner in 1993 [Table 1]. The subsequent scoring was published by Vaizey *et al.* in 1999 and became popularized as St. Marks Hospital or Vaizey's^[8] scores [Table 2]. Although many scoring methods were published, the most significant one was published in 1999 by Rockwood *et al.* and was known as the Fecal Incontinence Severity Index (FISI) [Table 3].^[9] A recently published addition to this is the scoring system developed by Garg *et al.* [Table 4].^[10]

The pertinent question is why two more scoring systems (Vaizey and FISI) were published after the immensely popular Cleveland Clinic or Wexner scoring system was published in 1993. Vaizey scores also became equally, if not more, popular than Wexner scores. The reason was that there were the shortcomings in the Wexner scoring system that were improved upon by Vaizey scores. This raises the question of whether a new scoring system like the Garg Incontinence Scores (GIS) is warranted at present.

Wexner's scores encompassed three types of FI, namely, solid, liquid, and flatus, and Vaizey improved upon it by including the fourth type, urges FI (Lack of ability to defer defecation for 15 min). This was a notable advancement over the Wexner scores as urge FI is distinct from other types and can occur independently in many patients. In addition, Vaizey's scores included the "need to take constipating medicines," which was not in Wexner's scores. Apart from this, Vaizey's scores were similar to Wexner's scores. Both the scores, Wexner and Vaizey, became popular and have been widely used in the last three decades. The strength of both these scores has been their simplicity and user-friendly nature. However, there was a fundamental flaw in both scores, which have been highlighted and perhaps corrected too by Garg *et al.* They assigned equal weightage to different FI types (solid, liquid, flatus, and urge). While simplicity was intended, this approach lacked statistical rigor because FI types encompass a diverse spectrum that demands varied

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weightage. We would agree with Garg *et al.* that simplicity must be an integral part of any scoring system, but scientific accuracy must not be compromised.^[10] There needs to be an

optimum balance between the two. The scoring system should be simple but must not compromise scientific soundness in any way. FISI scores perhaps failed due to this. In FISI scores, an attempt was made to give weights to different FI types, but the scoring system was too complicated to be used by a common practitioner. Moreover, the statistical methods utilized in FISI scores had lacunae like small sample size, filling the questionnaire by email, and not allowing identical scores in different cells while assigning weights.

Therefore, Vaizey and Wexner's scores were on one end of the spectrum (too simple but statistically weak), whereas FISI scores were on the other end (statistically better but too complicated). In this regard, GIS has successfully achieved the optimum balance by making the scoring

Table 1: Wexner scoring system.^[7]

| | Never | Rarely | Sometimes | Usually | Always |
|----------------------|-------|--------|-----------|---------|--------|
| Solid | 0 | 1 | 2 | 3 | 4 |
| Liquid | 0 | 1 | 2 | 3 | 4 |
| Gas | 0 | 1 | 2 | 3 | 4 |
| Wears a pad | 0 | 1 | 2 | 3 | 4 |
| Lifestyle alteration | 0 | 1 | 2 | 3 | 4 |

Rarely: <1/mo. Sometimes: <1/wk to ≥1/mo. Usually: <1/d to ≥1/wk. Always: ≥1/d

Table 2: Vaizey's scoring.^[8]

| | Never | Rarely | Sometimes | Weekly | Daily |
|--|-------|--------|-----------|--------|-------|
| Solid stool incontinence | 0 | 1 | 2 | 3 | 4 |
| Liquid stool incontinence | 0 | 1 | 2 | 3 | 4 |
| Gas incontinence | 0 | 1 | 2 | 3 | 4 |
| Alteration in life style | 0 | 1 | 2 | 3 | 4 |
| | No | Yes | | | |
| Need to wear a pad or plug | 0 | 2 | | | |
| Constipating medication | 0 | 2 | | | |
| Lack of ability to defer defecation for 15 min | 0 | 4 | | | |

Never: No episodes in last 4 wk, Rarely: 1 episode in last 4 wk, Sometimes: ≥1 in last 4 wk but <1/wk, weekly: ≥1/wk to <1/d, always: ≥1/d

Table 3: Fecal incontinence severity index scoring.^[9]

| | ≥2 times/ day (patient/ surgeon scores) | Once/day (patient/ surgeon scores) | ≥2 times/ week (patient/ surgeon scores) | Once/week (patient/ surgeon scores) | 1-3 times/month (patient/surgeon scores) |
|--------|---|--|--|---|---|
| Gas | 12/9 | 11/8 | 8/6 | 6/4 | 4/2 |
| Mucous | 12/11 | 10/9 | 7/7 | 5/7 | 3/5 |
| Liquid | 19/18 | 17/16 | 13/14 | 10/13 | 8/10 |
| Solid | 18/19 | 16/17 | 13/16 | 10/14 | 8/11 |

Table 4: Garg incontinence scores.^[10]

| Incontinence type | Weight | Frequency | | | Maximum score |
|-------------------|--------|----------------|---------------------|-------------------|---------------|
| | | Never (points) | Occasional (points) | Common (points) | |
| | | | (≤1 episode/week) | (>1 episode/week) | |
| Solid | 8 | 0 | 1 | 2 | 16 |
| Liquid | 8 | 0 | 1 | 2 | 16 |
| Urge | 7 | 0 | 1 | 2 | 14 |
| Flatus | 6 | 0 | 1 | 2 | 12 |
| Mucus | 6 | 0 | 1 | 2 | 12 |
| Stress | 5 | 0 | 1 | 2 | 10 |
| Total | | | | | 80 |

Score in a cell=Weight for that incontinence type×frequency points. For example, a person with occasional liquid incontinence would have an 8×1 = 8 score. Maximum possible score=80 (total incontinence), minimum score possible=0 (no incontinence)

Table 5: Comparison of existing scoring systems with the new scoring system.^[10]

| | Wexner | Vaizey | FISI | Garg |
|---|--------|--------|------|---------------------------------------|
| Comprehensive | No | No | No | Yes |
| FI type included: urge FI | No | Yes | No | Yes |
| FI type included: mucous FI | No | No | Yes | Yes |
| Presence of confounding parameters like “Need to wear a pad,” “Need to take constipating medicine,” and “Alteration of lifestyle” | Yes | Yes | No | No |
| Assigning weights to each FI by an objective method | No | No | No | Yes |
| Inclusion of patient perceptions (<i>n</i>) | 0 | 0 | 34 | 50 |
| Inclusion of laypersons’ perceptions (<i>n</i>) | 0 | 0 | 0 | 50 |
| Simple and easy to use | +++++ | +++++ | + | +++++ |
| Detailed structured definitions | No | No | No | Yes |
| In-depth disability scores based on an objective description system | No | No | No | 4D3L (modified EQ-5D+ [EuroQol]) used |

FI: Fecal incontinence

system statistically sound while keeping the scores simple. The statistical methods used by Garg *et al.* have been quite good, like the use of 4D3L (a modified EQ-5D+ [EuroQol]), descriptive system, larger sample size, blinding of interviewer and interviewee, single interviewer filling all the proforma, filling of all proforma physically (not through email or telephonically), etc.^[10] The weight calculation for each FI type has also been done scientifically.^[10]

Another highlight of GIS has been that, unlike Wexner and Vaizey scores, it has deviated from the surgeon’s perspective of scoring to patients’ and laypersons’ perspectives.^[10] This is quite logical and a marked improvement because a scoring system developed for patients needs to be from their point of view. Perhaps, it was assumed during the development of Wexner and Vaizey scores that surgeons’ and patients’ perspectives would be similar. However, it was shown in the second part of their study by Garg *et al.*^[10] and even in earlier studies,^[9] that surgeons’ and patients’ perceptions of different types of FI may differ significantly. Therefore, the idea of basing the GIS on patients’ and laypersons’ perceptions looks logical and scientific.^[10]

Another improvement in GIS has been the inclusion of FI types which were missed out by previous scoring systems like stress FI, mucus FI and urge FI (urge FI was included in FISI but not in the Wexner and Vaizey scores).^[7-10] This has made GIS quite comprehensive and complete. The authors also summarized and tabulated the comparison between the existing Wexner and Vaizey scores and GIS [Table 5].^[10]

Although the authors indicated that there is currently no gold standard system for assessing the severity of incontinence, validation of any new scoring system is a crucial step in evaluating its performance and reliability. It helps determine whether the new scoring system accurately reflects the actual severity of the condition it aims to measure. Without validation against an established gold standard or a recognized reference, there might be uncertainty about the accuracy and

reliability of the new scoring system’s results. To enhance the credibility and acceptance of the new scoring system, future studies could focus on validating it against well-established clinical criteria, conducting inter-observer and intra-observer variability testing, and ensuring its reliability and accuracy across different patient populations and clinical settings.

GIS looks like a paradigm shift. The improvements made over the existing scoring system are significant. However, there is still room for further analysis due to the limitations mentioned earlier. It will be interesting to see how this scoring system continues to evolve in the coming year.

Declaration of patient consent

Patient’s consent not required as there are no patients in this study.

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Conflicts of interest

Vipul D. Yagnik is member of the Editorial Board.

Use of artificial intelligence (AI)-Assisted technology for manuscript preparation

The author(s) confirms that there was no use of Artificial Intelligence (AI)-Assisted Technology for assisting in the writing or editing of the manuscript and no images were manipulated using the AI.

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