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Research Article

An observational study on assessing the quality of life in patients with moolam (anorectal diseases) reported at Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai

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Abstract

Introduction: The Siddha system identifies Moolam as a major anorectal disorder influenced by diet, lifestyle, and psychosomatic factors. This study assesses the impact of Siddha interventions on quality of life in patients with Moolam, addressing physical, psychosocial, and defecatory aspects, while analysing preventable etiological risk factors. Objectives: Primary objective: To assess the quality of life in patients with *Moolam* (Anorectal diseases) reporting at OPD of Ayothidoss Pandithar Hospital, NIS before and after taking Siddha interventions through HEMO-FISS QoL questionnaire and QoLAF questionnaire. Secondary objective: To assess the etiological factors with respect to diet, habits and occupational history mentioned in Siddha classical text.Materials and methods: This observational study (IEC No: NIS/24/IEC/2023/MP/40; CTRI/2023/08/056647) involved 60 patients aged 20–60 years with anorectal diseases (hemorrhoids, fissure, fistula), selected from 100 screened cases based on inclusion and exclusion criteria. After obtaining informed consent, QoL data were collected at baseline and after 48 days of Siddha interventions through regular OPD. Results: The study results showed that there is a statistically significant reduction (p value<0.001) in HEMO-FISS & QOLAF questionnaire scores, in patients who underwent Siddha interventions on comparing scores of baselines. Discussion: Anorectal disorders significantly affect quality of life, yet most Siddha studies focus only on symptom relief. This study highlights the holistic Siddha approach, targeting physical, psychological, and lifestyle factors through internal medicines, external therapies, Yoga Maruthuvam, and diet, thereby improving overall well-being and preventing recurrence. Conclusion: Based on the reduction of clinical symptoms and HEMO-FISS QoL & QoLAF Questionnaire scoring, it can be concluded that Siddha interventions are effective in the treatment of Anorectal diseases.

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Keywords: Fissure-in-ano, Fistula-in-ano, Hemorrhoids, HEMO-FISS Questionnaire, QOLAF Questionnaire, Siddha Intervention.

Introduction

Siddha system is a holistic healing science in treating the diseases and also ensures everyone to lead a healthy life. Siddhars classified the human diseases as 4448 in number. Among these, a spectrum of anorectal diseases has been mentioned under *Moolam*. Sage Yugimuni classified *Moolam* into 21 types in *Yugi Vaidhya Chinthamani* (1). In *Yugi Vaidhya Chinthamani, Agasthiyar 2000* and in *Thirumoolar naadi nool* the various etiological risk factors have been emphasised clearly which includes dietary, physical, socio-ethical and psychosomatic factors such as eating meat very much, sleeping in daytime, restraining hunger and urge of defecation/urination (2), (3).

The common benign anorectal conditions are Hemorrhoids, Fissure in Ano, Fistula in Ano. The most typical clinical manifestations of symptomatic hemorrhoids are mucus discharge, fecal soilage, pruritus, painless rectal bleeding, and perianal

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discomfort. Perianal fistulae often present with drainage of blood, pus, or stool from an external opening in the perianal region with intermittent pain that causes major discomfort (4). Acute fissures present with anal pain, spasm, and/or bleeding with defecation (5). Overall, anorectal diseases affect the Quality of Life in many patients.

Population or an individual's overall well-being in terms of both positive and negative aspects of their life at a given time is captured by the idea of Quality of Life, or QoL (6). Thus, patients with benign anorectal conditions have hampered Quality of Life. A combination of siddha medicines (internal and external), diet and lifestyle modifications manage not only the disease but also improve the quality of life in patients.

This study showed the importance to assess the quality of life in physical, biopsychosocial, and defecatory aspects of patients with *Moolam* before and after undertaking Siddha interventions. It also analysed the preventable etiological risk factors by which the disease progression and recurrence can be mitigated.

Anorectal Disorders (Moola Noigal):

"Anila pitha thondhamalathu moolam varaathu" - Siddhar Theraiyar. (***Anilam***-*Vaatham*, ***Pitha***-*Pitham*). Alterations in diet and deeds causes derangement of *vatham* and *pitham* humour leading to moolam. The primary *pitha* and *vatha* humours are impacted in the pathogenesis of *Moola noi*. According to *Agaththiyar 2000*,

- Eating much meat.
- Eating much ghee,
- Much intercourse
- Having much liquors
- Eating farmed pork meat
- Not following Justice
- Constraining Hunger,
- Constraining Urination
- Constraining Defecation also can cause *Moola rogam*.

Since the *Moolatharam* area is the seat for *Kundalini*, the body's energy centre, it has been accorded the highest significance in the Siddha system. *Moola rogam* encompasses a broad range of anorectal disorders like Hemorrhoids, Fissure in Ano and Fistula in ano.

Aim:

To evaluate the quality of life in patients with *Moolam* (Anorectal diseases - fistula in ano, fissure in ano, hemorrhoids) reporting at OPD of Ayothidoss Pandithar Hospital, NIS before and after taking siddha interventions.

Objectives

Primary objectives

To assess the quality of life in patients with *Moolam* (Anorectal diseases) reporting at OPD of Ayothidoss Pandithar Hospital, NIS before and after taking siddha interventions through Hemorhhoids-Fissure Quality of Life (HEMO-FISS QoL) questionnaire and Quality of Life in Anal Fistula (QoLAF) questionnaire.

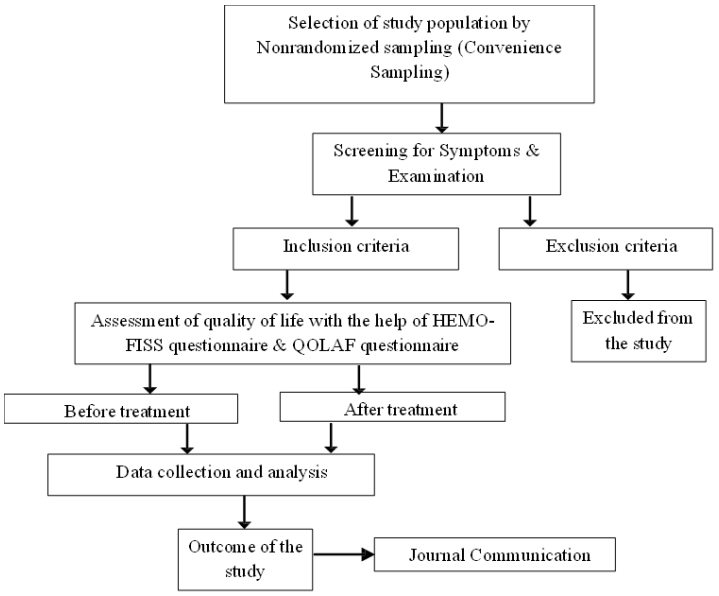
Secondary objectives

To assess the etiological factors with respect to diet, habits and occupational history mentioned in siddha classical text.

Materials and methods

This was an Observational study carried out to assess the quality of life in patients with Anorectal diseases. The period of the study was for 6 months from August 28th, 2023 to December 20th, 2023. This study was carried over in OPD of Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai – 600 047. It is a Nonrandomized (Convenience Sampling) Sample of 60 patients with any of the following Anorectal diseases: Fissure in ano, Fistula in ano, Hemorrhoids reporting at Ayothidoss Pandithar Hospital were included in this study

Image 1: Conduction of the study



Study enrolment

The following criteria were used for Inclusion of patients. Age ≥ 20 years and ≤ 60 years of Both sex, transgender; Patients with the following Anorectal diseases: Fissure in ano, Fistula in ano, and Internal & External Hemorrhoids and the patients who were willing to sign informed consent were included in the study.

Patients with features of severe hepatic, renal or cardiovascular disorders; Patients undertaking other than siddha medicines for the management of their anorectal disease and the patients who were not willing to sign informed consent were excluded from the study.

Statistical analysis

All the data collected were entered into the computer using MS excel software by the investigator. The data were analyzed using SPSS software under the guidance of SRO (stat) NIS. Descriptive and inferential data analysis techniques were applied to the data, including Frequency, Percentage, Means of Scores and Wilcoxon signed rank test for quantitative and qualitative data. The level of significance was kept 0.05. Necessary tables/graphs were generated to understand easily the profile of the patients enrolled in the study.

Quality of life in anorectal diseases

Quality of life, or QOL, is a crucial yet ambiguous indicator of an individual's subjective experience of wellbeing. It incorporates not just the state of health but also the social, mental, and physical dimensions. As a result, research indicates that QOL ought to be

the primary metric utilised to evaluate the effectiveness of interventions. Though benign in nature, anorectal diseases like hemorrhoids, fissure in ano and fistula in ano has negative impact on quality of life in patients related to their health (7).

Haemorrhoids Fissure quality of life questionnaire (HEMO-FISS-QoL)

Because anal fissures and hemorrhoidal illness have comparable characteristics. The particular questionnaire, known as HEMO-FISS-QoL (HF-QoL), was created in partnership with medical professionals who treat anal fissures and hemorrhoidal disease (Groupe de Recherche en Proctologie de la Societe Nationale Francaise de Colo-Proctologie, GREP), and it was validated to assess the impact on patients' day-to-day lives.

The first questionnaire's psychometric validation, which measured the overall impact of anal fissures and hemorrhoidal illness on quality of life. In patients with hemorrhoidal illness and anal fissures, the HF-QoL questionnaire scores increased with the intensity of symptoms (pain in ano, bleeding, prolapse of pile mass), as well as with the impact over day-to-day functioning. This questionnaire contains 23 questions classified in 4 domains: Physical disorders, psychological disorders, Defecation disorders, Sexuality disorders. Response for each question is varied from Always to Never or Not Applicable. The final score is standardized to get a score between 0 and 100 (8).

Quality of life in Anal fistula(QOLAF)

One of the anorectal disorders that significantly lowers a person's quality of life is fistula in ano. Surgery is the only effective treatment for anal fistulas. The goals are to close the fistula, reduce discomfort, stop a relapse, and maintain sphincter function. For uncomplicated fistulae, fistulotomy is thought to be the most effective treatment. However, "sphincter sparing techniques" are used to treat complex fistulae to strike a balance between the risk of incontinence and resolution. Therefore, the QoLAF-Q23 was used to assess the quality of life of patients with anal fistula before selecting a course of treatment.

Patients with anal fistulas have their quality of life assessed using the QoLAF-Q. The QoLAF-Q is made up of fourteen questions with several response alternatives on a five-point Likert scale. The range of values for this scale is as follows: 14 points corresponds to zero impact, 15–28 to limited impact, 29–42 to moderate impact, 43–56 to high impact, and 57–70 to extremely high impact. The QoLAF-Q was created in accordance with a strict methodological process. The anal fistula's "physical impact" and "psychosocial impact" are the two dimensions included in the final edition of the QoLAF-Q (9).

Observations and Results

Table 1: Distribution of the Study Subjects according to the Demographic Data

Demographic Data		Hemorrhoids	Fistula in Ano	Fissure in Ano
Gender	**Male**	75% (n=15)	95% (n=19)	60% (n=12)
	Female	25% (n=5)	5% (n=1)	40% (n=8)
Age	**20-30**	25%(n=5)	5%(n=1)	5%(n=1)
	31-40	50%(n=10)	40%(n=8)	40%(n=8)
	41-50	10%(n=2)	30%(n=6)	30%(n=6)
	51-60	15%(n=3)	25%(n=5)	25%(n=5)
Food habits	**Vegetarian**	15%(n=1)	10%(n=2)	20%(n=4)
	Mixed	85%(n=19)	90%(n=18)	80%(n=16)
Family History of Anorectal Diseases	**Yes**	45%(n=9)	30%(n=6)	25%(n=5)
	No	55%(n=11)	70%(n=14)	75%(n=15)

This table shows that most study participants were male in all groups, averaging 76.6% including Hemorrhoids, Fissure in Ano, and Fistula in Ano. Also, this study result indicates that age group of 31-40 is affected most in all groups. In addition, majority of study participants had the mixed food habits.

Table 2: Distribution of the Study Subjects according to the Etiological factors

Etiological Factors	Hemorrhoids	Fistula in ano	Fissure in ano
Restraining hunger	30% (n=6)	35% (n=7)	25% (n=5)
Restraining defecation	35% (n=7)	30% (n=6)	40%(n=8)
Restraining urination	30% (n=6)	30% (n=6)	55%(n=11)
Eating meat frequently & Eating farmed pork meat	45%(n=9), 5%(n=1)	50%(n=10), 15%(n=3)	35% (n=7), 10%(n=2)
Sleeping in day time	50%(n=10)	35%(n=7)	55%(n=11)
Often in state of anger or tiresome	65%(n=13)	50%(n=10)	60%(n=12)
Consuming much ghee in diet	5%(n=1)	15%(n=3)	0%(n=0)

Upon analysis of etiological factors in patients with hemorrhoids, 13 (65%) often in state of anger or tiresome, 10 (50%) had the habit of sleeping in day time, 9 (45%) ate meat frequently, 7 (35%) restrained their defecation, 6 (30 %) restrained their hunger, 6 (30%) restrained their urination, Only 1 (5%) consumed much ghee in diet or eat farmed pork meat. While looking at the etiological factors of Fissure in Ano, 12 (60%) often in state of anger or tiresome, 11 (55%) restrained their urination, 11 (55%) had the habit of sleeping in day time, 8 (40%) restrained their defecation, 7 (35%) ate meat frequently, 5 (25%) restrained their

hunger, 2 (10%) ate farmed pork meat, None of them consumed much ghee in diet. Examining the etiological factors in patients with Fistula in Ano reveals that, 10 (50%) ate meat frequently, 10 (50%) often in state of anger or tiresome, 7 (35%) restrained their hunger, 7 (35%) had the habit of sleeping in day time, 6 (30%) restrained their urination, 6 (30%) restrained their defecation, 3 (15%) consumed much ghee in diet or eat farmed pork meat.

This table shows that Frequent constipation is the major clinical symptom in all groups. Pain in anal region was common in Hemorrhoids and Fissure in Ano groups. Bleeding was more common in Hemorrhoids group whereas Serous type of discharge was common in Fistula in Ano group. Among the Hemorrhoids group, External Hemorrhoids was more frequent.

Table 3: Distribution of the Study Subjects according to the Clinical symptoms

Symptoms	Hemorrhoids	Fistula in ano	Fissure in ano
Frequent	65% (n=13)	45% (n=9)	80% (n=16)
Pain in Anal	70% (n=14)	25% (n=5)	70% (n=14)
Discharge/ Bleeding	55% (bleeding) (n=15)	60% Serous discharge (n=12), 20%	50% (n=10)
Mass present in Anus	55% - Ext. hemorrhoids (n=15), 20%	nil	nil

Table 4: Descriptive statistics of HEMO-FISS Questionnaire in Hemorrhoids patients

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Final score before treatment	20	20.1970	14.61496	2.27	61.25
Final Score after treatment	20	7.6295	4.20925	1.14	16.25
The statistical data provides highly significant results of P value <0.001 in Wilcoxon signed rank test on comparing HEMO-FISS Quality of life scale questionnaire before and after treatment with siddha medicines in patients treated for hemorrhoids.					

Table 5: Descriptive statistics of HEMO-FISS Questionnaire in Fissure-in-Ano patients

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Final score before treatment	20	24.6940	11.70248	3.75	48.91
Final Score after treatment	20	9.0500	3.65593	0.00	15.79
The statistical data provides highly significant results (P <0.001) on comparing HEMO-FISS Quality of life scale questionnaire before and after treatment with siddha medicines in patients treated for fissure in ano.					

Table 6: Descriptive statistics of QoLAF Questionnaire score in Fistula-in-Ano patients

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Final score before treatment	20	30.9000	7.93991	21.00	44.00
Final Score after treatment	20	21.9500	4.05845	14.00	32.00
The statistical data provides highly significant results (P <0.001) on comparing QOLAF Quality of life scale questionnaire before and after treatment with siddha medicines in patients treated for fistula in ano.					

Figure A: Before & After comparison of HEMO-FISS Questionnaire score in Hemorrhoids patients

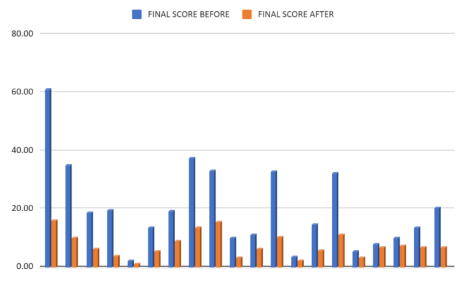


Figure B: Before & After comparison of HEMO-FISS Questionnaire score in Fissure in ano patients

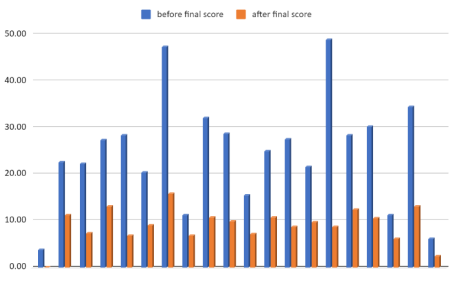
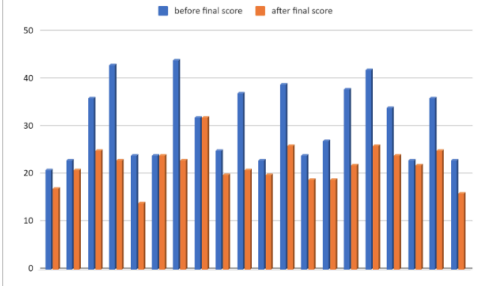


Fig. C. Before & After comparison of QoLAF Questionnaire score in Fistula in ano patients



Discussion

The importance of quality of life and the necessity of its practical therapeutic implementation has grown across all medical specialties. Anorectal disorders though benign in many cases, affects quality of life very significantly. WHO defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.

Regarding Anorectal diseases, majority of published studies in Siddha system are Clinical trials & Literature reviews. Improvement in the clinical symptoms was mainly focused rather than absolute Quality of Life.

Moolatharam is said to be the main among six other *Aatharam* in our body. Factors affecting the proper functioning of *Moolatharam* results in various diseases especially Anorectal diseaeses. The textually conveyed etiological factors for the development of anorectal diseases include, Restraining hunger, which is a form of an eating disorder often results in chronic constipation and protein malnutrition associated weakened pelvic floor muscles (10). Restraining defecation causes increased intraabdominal and intra-rectal pressures reflected in rectal vessels and mucosa resulting in development of Hemorrhoids and Fissure in Ano. Restraining urination causes accumulation of keezhvaaivali in the abdomen and results in ulcers in genital regions which may be developed into Fistula in ano in future (11). Red meat like pork meat contains, N-nitroso compounds (NOCs), polycyclic aromatic hydrocarbons (PAHs) and heterocyclic amines (HCAs), are present in the red meat (pork, lamb, mutton, beef, etc.) the probable mechanistic factors and mutagenic/ carcinogenic in nature proposed for the development of colorectal carcinoma in frequent or long-term eating of meat (12). According to Padharthaguna chindhamani Daytime sleeping causes development of many Vaadharogangal as the regular heat to be dispersed from the body is altered (13). Frequent midday naps and poorer health outcomes later in life may be mediated by inflammation, the immune system's reaction to cell damage or foreign pathogens (14). Psychological factors such as chronic stress, anger, tiresome and depression can affect bowel movements in multiple ways. It can lead to increased muscle tension in the pelvic floor, making it harder to relax the muscles during bowel movements. This can result in straining, which can contribute to the development of conditions like haemorrhoids or anal fissures and further exacerbating existing anorectal disorders. Consuming much amount of ghee in diet can produce some digestive issues such as bloating, indigestion and diarrhoea thus can exacerbate some anorectal disorders.

According to the occupational history of the above 3 groups of patients, the sitting type of work nature is more commonly affected. (E.g. tailors, drivers, system work). Sitting for long periods can increase the risk of developing many anorectal diseases. Sitting can put pressure on the veins in the anus, which can cause hemorrhoids. Another important factor is physical and psychological stress attributed to sleep disorders in this type of occupation. Some of the patients had a positive family history of anorectal diseases (45% in patients with haemorrhoids, 25% in patients with fissure in ano and 30% in patients with fistula in ano).

Anal diseases include, hemorrhoids, fissure in ano, perianal abscess and fistula in ano are becoming a major lifestyle disorder. These conditions which are often not responding to conservative medical managements require surgical interventions.

According to Siddha standard Treatment Guidelines (15), the interventions commonly prescribed for these anorectal diseases include, internal medicines and external therapies such as Kattu, Patru, Poochu, Pugai, Kalimbu and Neer followed by Yoga maruthuvam (16) and Dietary advice. Internal medications like *Moola kudora thailam, Thiripala chooranam, Karunai ilagam, Thetrankottai ilagam, Venpoosani nei, Gowri chindamani chenduram, Nathai parpam, Naaga parpam, Sangu parpam and Rasagandhi mezhugu, etc.* External Medications include *Amirtha vennai, Kungiliya vennai, Thiripala chooranam* as sitz bath powder*, etc.* Choice of medicines, doses and duration was altered according to the patient's condition, *Dhegi,* age, digestive capacity and severity of the disease. Patients were encouraged to add rice variety like *Kaar, Karuvai;* tender vegetables of *Atthi (Ficus racemosa), Avarai (Doichos lablab)* and *Karunai (Amorphophallus paeoniifolius);* Greens like *Thuthi (Abutilon indicum), Ponnanganni (Alternantha sessilis);* Fruits, nuts and dairy products. Patients were advised to avoid hot and sour taste foods; tubers except *Amorphophallus*; constipating foods like cheese and unripe fruits. For lifestyle modification they were advised to take regular oilbath; to do regular simple exercises; to use cotton cushion for sitting and to follow proper stooling pattern.

According to Siddhar Thirumoolar, 'One that cures Physical, Psychological and Prevents the ailments as well as bestows the immortality is medicine'. Thus, the various siddha treatments and dietary advices not only healing their physical illnesses but also addressing their psychological impact caused by that particular disease.

Conclusion

The study results also showed that there is a statistically significant reduction (p value<0.001) in HEMO-FISS QoL questionnaire Score, QOLAF questionnaire for Hemorrhoids, Fissure in Ano and Fistula in Ano patients respectively taking Siddha medicines after treatment on comparing scores before treatment.

The etiological factors mentioned in various Siddha texts for the development of Anorectal Diseases were attributed to lifestyle alterations which were well correlated. Circadian rhythm alteration due to stress, improper diet and deeds were the major precipitating factors. Thus, Siddha way of lifestyle such as proper diet, activities, oil bath, siddhar yogam and hygienic principles prescribed in Siddha literature and line of treatment for individuals helped in the amelioration of Quality of Life in patients with Anorectal diseases.

Therefore, further studies may be carried out as clinical trials with the aforementioned questionnaires and a single Siddha drug regimen for the management of Ano rectal diseases

Limitation and recommendation

Current study was carried out single centric with 60 patients which were subdivided into 3 groups and 20 patients in each group. A multicenter study with increase in sample size will provide more convincing results and thus generalizability.

This study was limited with only three set of diseases viz. hemorrhoids, fissure in ano and fistula in ano. In further study, QoL in various other anorectal conditions such as fecal incontinence, pruritis ani and anorectal malignancies can also be analysed.

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ANNEXURES

HEMO-FISS QUESTIONNAIRE (for Hemorrhoids & Fissure-in-ano)

Last week, because of my anal symptoms ...	Always	Very often	Regularly	Rarely	Never	Not applicable
Q1 ... it is uncomfortable to remain seated	☐	☐	☐	☐	☐	☐
Q2 ... I have to change clothes regularly or use a special type of clothing	☐	☐	☐	☐	☐	☐
Q3... it is uncomfortable to remain standing	☐	☐	☐	☐	☐	☐
Q4 ... my relations with my partner are disrupted	☐	☐	☐	☐	☐	☐
Q5 ... I am uncomfortable while walking	☐	☐	☐	☐	☐	☐
Q6 ... I feel ashamed	☐	☐	☐	☐	☐	☐
Q7 ... I am afraid of having a bowel movement	☐	☐	☐	☐	☐	☐
Q8 ... I feel uncomfortable with people around me	☐	☐	☐	☐	☐	☐
Q9 ... I am uncomfortable when I play sports	☐	☐	☐	☐	☐	☐
Q10 ... I am uncomfortable during bowel movements	☐	☐	☐	☐	☐	☐
Q11 ... driving a vehicle is difficult	☐	☐	☐	☐	☐	☐
Q12 ... taking care of my children is difficult	☐	☐	☐	☐	☐	☐
Q13 ... riding a two-wheeled vehicle or bicycle is difficult	☐	☐	☐	☐	☐	☐
Q14 ... I find it difficult to do my work well	☐	☐	☐	☐	☐	☐
Q15 ... I feel as if I am different from others	☐	☐	☐	☐	☐	☐
Q16 ... I do fewer things than I would want to do	☐	☐	☐	☐	☐	☐
Q17 ... my sexual activity has decreased	☐	☐	☐	☐	☐	☐
Q18 ... I avoid going out (travel, leisure, friends...)	☐	☐	☐	☐	☐	☐
Q19 ... my family life is disrupted	☐	☐	☐	☐	☐	☐
Q20 ... I am uncomfortable when doing house chores / tidying up / handy work	☐	☐	☐	☐	☐	☐
Q21 ... I am uncomfortable in my own body	☐	☐	☐	☐	☐	☐
Q22 ... I am uncomfortable after having a bowel movement	☐	☐	☐	☐	☐	☐
Q23 ... I believe that my illness is incurable	☐	☐	☐	☐	☐	☐

QoLAF QUESTIONNAIRE (for Fistula-in-ano)

Quality of life questionnaire in patients with anal fistula (QoLAF-Q)				
1. How often does pus ooze out your anal fistula?				
1.Never	2.Rarely (weeks go by with no oozing of pus)	3.Sometimes	4.Frequently (almost every day)	5.Always or continuously (every day)
2. How much pus drains from your fistula?				
1.None	2.A little (small stains on undergarments)	3.Moderate (quite a bit of under garment soiling, and I need one gauze per day)	4.Quite a bit (I need to use several gauze simultaneously or a pad per day)	5.A lot (I need to use more than 4 pads or a packet of gauze per day)
3. How often do you experience gas leakage since you have had the fistula?				
1.Never	2.Rarely (weeks go by with no leakage)	3.Sometimes (a day or so per week)	4.Frequently (almost every day)	5.Always or continuously (every day)
4. How often do you experience fecal leakage since you have had the fistula?				
1.Never	2.Rarely (weeks go by with no leakage)	3.Sometimes (a day or so per week)	4.Frequently (almost every day)	5.Always or continuously (every day)
5. How much fecal leakage have you experienced since having the fistula?				
1. None	2. Mild (light soiling of undergarment)	3. Moderate (more soiling, and I need 1 gauze per day)	4. Quite a bit (I need to use several gauze simultaneously or a pad per day)	5.A lot (I need to use more than 4 pads or a package of gauze per day)
6. How often do you have pain in the area of the fistula?				
1.Never	2.Rarely (weeks go by with no leakage)	3.Sometimes (a day or so per week)	4.Frequently (almost every day)	5.Always or continuously (every day)
7. How intense is the pain caused by the fistula?				
1. None	2. Mild	3. Moderate	4. High	5.Extreme or worst imaginable
8. Since you have had symptoms caused by the fistula, how would you describe your health?				
1. Excellent	2. Good	3. Acceptable	4. Poor	5. Horrible
9. How much does the fistula affect your physical health (level of energy, sleep pattern, general wellbeing, etc.)?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot
10. How much does the fistula affect your psychological health (body image, happiness, self-esteem, ability to concentrate, etc.)?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot
11. How much does the fistula affect your level of independence (mobility, ability to work, activities of daily living, etc.)?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot
12. How much does the fistula affect your social relationships (with friends, spouse/partner, family)?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot
13. How much does the fistula affect your sexual relationships?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot
14. How much does the fistula affect other aspects of your life (freedom, free time, economic resources, etc.)?				
1. None	2. A little	3. Somewhat	4. Quite a bit	5. A lot

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