LITERATURE REVIEW
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Clinical and sociodemographic profile of adults patients with intestinal stomas

Perfil sociodemográfico e clínico dos pacientes adultos portadores de estomas intestinais

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ABSTRACT

Introduction: Intestinal stoma is the construction of an opening in the abdomen wall to divert feces and can be temporary or permanent. **Objective:** To identify, in the scientific literature, studies describing the clinical and sociodemographic profile of adult patients with intestinal stomas. **Methods:** A bibliographic study comprising 14 full scientific articles in Portuguese published between January 2011 and September 2021 was conducted. The search employed the specific descriptors Colostomy, Ileostomy, Colonic Pouches and Intestinal Cancer, cross-referenced with the general descriptors Health Profile, Epidemiology and Patient Discharge. **Results:** Prevalence was higher in males (20.0–67.5%) than in females (32.5–80.0%). Patients were predominantly aged >60 years (56.5–68.4%) and a higher prevalence (35.6–59.8%) was observed in individuals with a partner. Most patients were educated to primary level (29.6–70.9%), retired (34.5–68.4%), and had an income of ≤ one minimum wage (13.1–61.1%). Colorectal cancer was the most common indication (17.9–80.0%) for intestinal stoma construction. Colostomy was the most frequent procedure (18.6–100.0%) in all studies reviewed, followed by ileostomy (4.3–24.8%). Construction of permanent stoma was performed in 30.2–100.0% of cases and temporary stoma in 27.2–100.0%. A wide variety of complications of intestinal stomas were reported, including peristomal dermatitis, retraction, prolapse, mucocutaneous detachment, granuloma, parastomal hernia, hyperemia, bleeding, anastomotic dehiscence, wall abscess, post-operative ilium, intestinal obstruction, evisceration, surgical site infection and enterocutaneous fistula. The mortality rate was 1.2–7.7%. **Conclusion:** Patients were predominantly older, male, educated to primary level, retired, and with income of one minimum wage or less. Colorectal cancer was the most common indication for colostomy construction and most frequent complications were peristomal dermatitis, parastomal hernia, retraction and prolapse.

Keywords: Colostomy, Ileostomy, Colonic pouches, Intestinal neoplasms, Health profile, Patient discharge.

RESUMO

Introdução: Estoma intestinal é a confecção de um orifício na parede abdominal, que tem por finalidade o desvio do trânsito intestinal, podendo ser definitivo ou temporário. **Objetivo:** Identificar, na literatura científica, artigos que descrevam o perfil sociodemográfico e clínico dos pacientes adultos portadores de estomas intestinais. **Métodos:** Pesquisa bibliográfica com 14 artigos científicos completos, escritos no idioma português, publicados entre janeiro de 2011 e setembro de 2021, utilizando os descritores específicos Colostomia, Ileostomia, Bolsas cólicas, Neoplasias intestinais, que foram cruzados com os descritores gerais Perfil de saúde, Epidemiologia e Alta do paciente. **Resultados:** O sexo masculino foi mais frequente, variando de 20,0–67,5%, e o sexo feminino variou de 32,5–80,0%. Com relação à faixa etária, prevaleceram pacientes com idade acima de 60 anos, variando de 56,5–68,4%. Houve uma frequência maior em pacientes com companheiros, com variação de 35,6–59,8%. A maioria apresentava escolaridade até o ensino fundamental, variando de 29,6–70,9%, era aposentada, com uma variação de 34,5–68,4%, e tinha renda familiar de até um salário mínimo, variando de 13,1 até 61,1%. A neoplasia colorretal foi a indicação mais frequente para a confecção do estoma intestinal, variando de 17,9–80,0%. A colostomia foi mais frequente em todos os artigos, com variação de 18,6–100,0%. A confecção de ileostomia variou de 4,3–24,8%; a confecção do estoma definitivo, de 30,2–100,0%; a confecção do estoma temporário, de 27,2–100,0%. As complicações dos estomas intestinais nos pacientes foram bastante variadas, sendo listadas dermatite periestoma, retração, prolapso, deslocamento mucocutâneo, granuloma, hérnia paraestomal, hiperemia, sangramento, deiscência da anastomose, abscesso de parede, íleo pós-operatório, obstrução intestinal, evisceração, infecção de sítio cirúrgico e fístula enterocutânea. A frequência de mortalidade variou de 1,2–7,7%. **Conclusão:** Prevaleceram indivíduos idosos, do sexo masculino, com ensino fundamental, aposentados e com renda familiar de até um salário mínimo. A neoplasia colorretal foi a indicação mais prevalente para a confecção da colostomia, com complicações como dermatite periestomal, hérnia paraestomal, retração e prolapso.

Palavras-chave: Colostomia, Ileostomia, Bolsas cólicas, Neoplasias intestinais, Perfil de saúde, Alta do paciente.

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INTRODUCTION

Intestinal stoma is the construction of an opening in the abdominal wall for externalization and diversion of feces, and may be temporary or permanent[1-3].

The procedure, first described by Henry Albert Hartmann in 1921, involves surgical resection of the sigmoid colon and proximal end of the rectum, formation of end colostomy at the descending colon and closure of the rectum[4].

Intestinal stoma construction is used to surgically manage several conditions such as inflammatory diseases and colorectal cancer. Inflammatory bowel diseases (IBDs) are a group of chronic disturbances which includes Crohn's disease and ulcerative colitis that cause inflammation or ulceration (or both) of the intestinal lining. Tumors of the colon and rectum are fairly common, having a higher incidence in individuals aged 85 years or older, those with a family history of colon cancer, as well as people with IBD or polyps. The operation, either curative or palliative, is the main treatment for most colon and rectal cancers[3].

Stoma construction remains a cause of psychosocial effects which directly impact the postoperative quality of life of patients. Difficulties accepting the loss of voluntary control of physiological evacuations and dealing with daily use of a pouch attached to the abdomen can culminate in low self-esteem, depressive symptoms, social isolation, distorted body image, collapse of marital relationships and loss of human liberty[5]. In order to help ostomates adapt to this change, multi-disciplinary teams comprising physicians, nurses, psychologists, stomal therapists and social workers are needed[6].

Knowledge on the profile of patients requiring intestinal stoma can help prepare health professionals to devise guidance strategies for inclusion in routine practice.

OBJECTIVE

To identify, in the scientific literature, studies describing the clinical and sociodemographic profile of adults patients with intestinal stomas.

METHODS

A descriptive bibliographic search of the Biblioteca Virtual em Saúde (Virtual Health Library) database was performed using the specific descriptors Colostomy, Ileostomy, Colonic Pouches, and Intestinal Cancer, cross-referenced with the general descriptors Health Profile, Epidemiology and Patient Discharge. Scientific studies available in full, free of charge, and in Portuguese, published between January 2011 and September 2021 were eligible for selection. Literature review or bibliographic search articles, case reports and studies involving pediatric or neonatal populations were excluded.

RESULTS

All specific descriptors (Colostomy, Ileostomy, Colonic Pouches, and Intestinal Cancer) were cross-referenced with the general descriptors (Health Profile, Epidemiology and Patient Discharge), leading to the selection of 14 scientific studies[7-20], as listed in the charts and figures below.

The gender distribution of patients with intestinal stomas is depicted in Figure 1. Of the 19 articles reviewed, nine[8,9,11-13,16-19] showed a higher prevalence in males, three[7,14,15] a higher prevalence in females, one study[10] found similar rates in both men and women, while another study[20] failed to report data on patient gender.

Overall, the percentage of female patients ranged from 32.5[8] to 80.0%[15], whereas percentage of men ranged from 20.0[15]–67.5%[8], revealing a higher rate in men than women.

The percentage of older people with intestinal stomas can be seen in Figure 2. Of the nine studies which assessed age

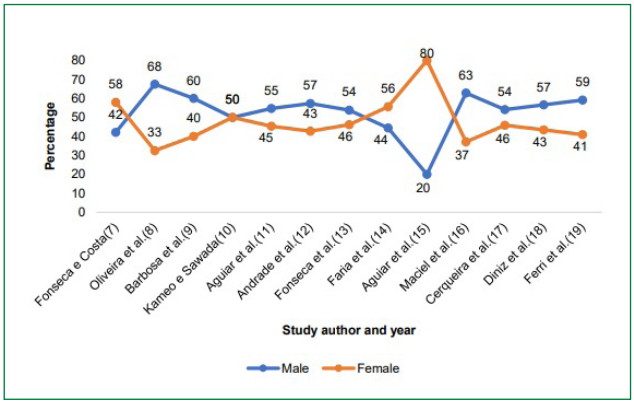


Figure 1– Sex of intestinal stoma patients. Brazil, January/2011 to September/2021.

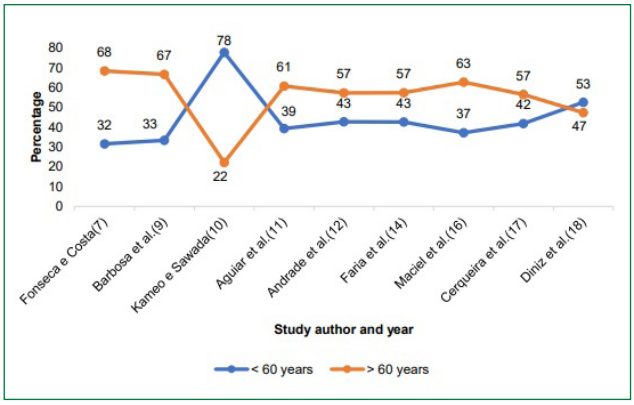


Figure 2 – Percentage of older people with intestinal stomas. Brazil, January/2011 to September/2021.

profile, the proportion of participants aged ≥60 years ranged from 56.5[17] to 68.4%[7]. Only two studies found a higher proportion of individuals aged <60 years, representing 52.6%[18] and 77.8% of their respective samples[10].

Mean age was reported in five studies (range 39.7[8]–71.1 years[17]). Only one article[15] failed to report mean age or age groups, describing only age range.

In Figure 3, five studies[9,11,12,14,17] found that the prevalence of intestinal stomas was higher in people with a partner (35.6[9]–59.8%[11]). Four studies[10,16,18,20] showed a higher percentage of patients with intestinal stomas had no partner (range 41.5[18]–61.1%[10]). One article[7] identified the same rate in individuals with or without a partner, whereas four studies[8,13,15,19] failed to provide this information.

As presented in Chart 1, most patients were educated to primary level (29.6[18]–70.9%[11]).

The results of analysis of religion, reported in four articles in chart 2, showed a predominance of Catholics in the studies of Fonseca, Costa[7] (68.4% of sample) and Aguiar et al.[11] (74.4%). Protestants predominated in the study by Faria et al.[14] (42.6%) and Christians in the article by Maciel et al.[16] (51.4%).

With regard to occupational status of intestinal stoma patients, the majority were retired (34.5[17]–68.4%[11]), as shown in Chart 3.

As presented in Chart 4, most intestinal stoma patients had an income of up to one minimum wage, with rates ranging from 13.1[18]–61.1%[14] across studies.

Only one study[17] provided information on race, showing most participants were white (50.2%), followed by brown (38.4%) and black (8.2%). For the presence of children, two studies[14,16] reported this data, where 85.2 and 80.0% of patient samples had children, respectively.

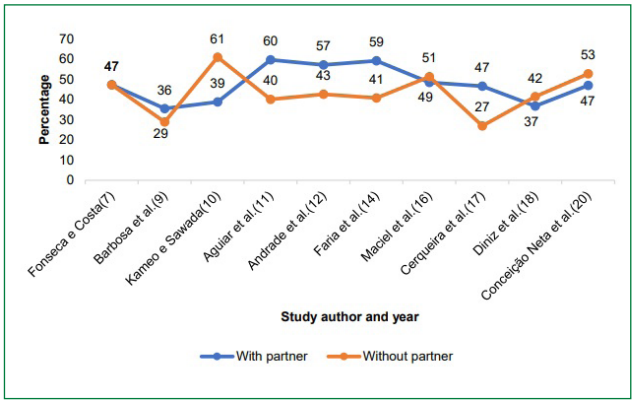


Figure 3 – Intestinal stoma patients according to presence or absence of partner. Brazil, January/2011 to September/2021.

With respect to patient comorbidities, three studies[9,16,19] reported this information, with systemic arterial hypertension being the most common co-occurring condition.

The main etiologies underlying the construction of intestinal stomas reported by nine articles are outlined in the Chart 5. Colorectal cancer was the most common cause, followed by

Chart 1 – List of articles reviewed according to educational level of intestinal stoma patients. Brazil, January/2011 to September/2021.

Identification of article	Educational level (%)
Fonseca et al.[7]	Pre-school: 78.8 Primary: 5.3 Secondary: 5.3 Higher: 10.6
Barbosa et al.[9]	No formal education: 22.2 Primary: 42.2 Secondary: 24.4 Higher: 11.1
Kameo et al.[10]	Illiterate: 22.2 Primary: 33.3 Secondary: 27.8 Higher: 16.7
Aguiar et al.[11]	Illiterate: 6.8 ≤8 years of education: 70.9 ≤11 years of education: 17.9 >12 years of education: 4.4
Andrade et al.[12]	Primary: 67.4 Secondary and Higher: 32.5
Faria et al.[14]	Primary: 51.9 Secondary: 31.5 Higher: 16.7
Maciel et al.[16]	Primary: 60.0 Secondary: 11.5 Higher: 11.5 Post-Graduate: 5.7
Cerqueira et al.[17]	Primary: 59.2 Secondary: 24.3 Higher: 6.7
Diniz et al.[18]	Illiterate: 6.9 Primary: 29.6 Secondary: 11.1 Higher: 4.5

Chart 2 – List of articles reviewed according to religion of intestinal stoma patients. Brazil, January/2011–September/2021.

Identification of article	Religion (%)
Fonseca et al.[7]	Catholic: 68.4 Protestant: 26.3 Spiritist: 5.3
Aguiar et al.[11]	Catholic: 74.4
Faria et al.[14]	Protestant: 42.6 Catholic: 37.0 Spiritist: 3.7 Jehova´s Witness: 1.9
Maciel et al.[16]	Christian: 51.4 Catholic: 42.9

Chart 3 – List of articles reviewed according to occupational status of intestinal stoma patients. Brazil, January/2011 to September/2021.

Identification of article	Occupational status (%)
Barbosa et al.[9]	Retired: 62.2 Sick leave: 20.0
Aguiar et al.[11]	Retired: 68.4 Sick leave: 52.9 Homemaker: 28.1 Self-employed: 3.5
Andrade et al.[12]	Retired: 50.5 Employed: 16.8 Unemployed: 23.6
Faria et al.[14]	Employed: 7.4 Unemployed: 92.6
Cerqueira et al.[17]	Retired: 34.5 Claiming benefits: 22.7 Unemployed: 18.4 Paid employment: 14.1 Student: 0.8 Not stated: 9.4
Diniz et al.[18]	Retired: 47.1 Employed: 29.1 Unemployed: 9.0 Information not given: 14.8

Chart 4 – List of articles reviewed according to family income of intestinal stoma patients. Brazil, January/2011 to September/2021.

Identification of article	Family income (%)
Aguiar et al.[11]	≤2.5 MWs: 67.5 3–4 MWs: 29.9 >5.5 MWs: 2.6
Andrade et al.[12]	≤1 MW: 31.4 >1 MW: 68.5
Faria et al.[14]	< 1 MW: 61.1 1-3 MWs: 33.3 4-6 MWs: 1.9 > 7 MWs: 3.7
Diniz et al.[18]	≤ 1 MW: 13.1 1 MWs: 20.4 2-3 MWs: 26.9 > 3 MWs: 11.6

MW: Minimum Wage.

inflammatory disease, trauma, intestinal obstruction, intestinal perforation and megacolon.

The proportion of intestinal stomas indicated due to colorectal cancer is depicted in Figure 4. Of the 14 articles analyzed, nine reported this data, with colorectal cancer rates ranging from 17.9[13]–80.0%[15].

As illustrated in Figure 5, half of the studies reported the proportion of colostomies and ileostomies in intestinal stoma patients. Colostomy was the most frequent procedure in the studies reviewed, with rates ranging from 18.6[19]–100.0%[15], followed by ileostomy construction, ranging from 4.3[19]–24.8%[11].

Chart 5 – List of articles reviewed according to indication for intestinal stoma. Brazil, January/2011 to September/2021.

Identification of article	Indication for intestinal stoma (%)
Oliveira et al.[8]	Colorectal cancer: 41.0
Barbosa et al.[9]	Colorectal cancer: 55.6 Chagasic megacolon: 13.3 Diverticulitis: 13.3
Aguiar et al.[11]	Colorectal cancer: 47.9 Acute abdomen: 31.6
Andrade et al.[12]	Colorectal cancer: 59.6 Trauma: 21.3 Inflammatory disease: 12.4
Fonseca et al.[13]	Colorectal cancer: 17.9 Diverticulitis: 12.8 Megacolon: 12.8 Gunshot wound: 10.3 Knife wound injury: 2.6
Aguiar et al.[15]	Colorectal cancer: 80.0 Perforated diverticulitis: 20.0
Ferri et al.[19]	Colorectal cancer: 63.9 Diverticulitis: 9.9 Intestinal obstruction: 6.7 Iatrogenic intestinal lesion: 2.8 Inflammatory bowel disease: 2.4 Gunshot wound: 2.0
Cerqueira et al.[17]	Colorectal cancer: 69.4 Intestinal obstruction: 8.2 Intestinal perforation: 7.5 Trauma: 2.4
Diniz et al.[18]	Colorectal cancer: 62.2 Inflammatory diseases: 9.5 Trauma: 8.2

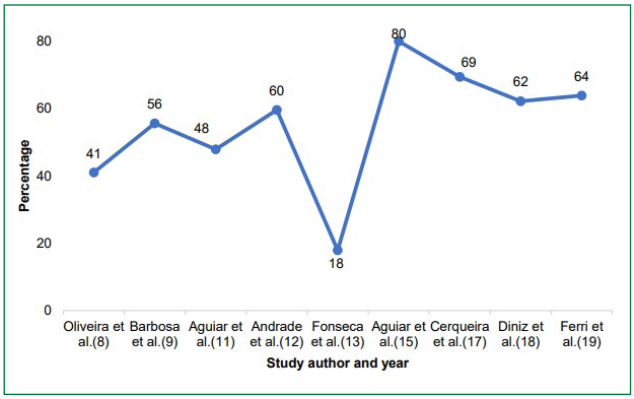


Figure 4 – Studies reviewed according to colorectal cancer rate. Brazil, January/2011 to September/2021.

Regarding rates of permanent and temporary stomas, 11 of the 14 articles reviewed reported this information (Figure 6). Of this total, six articles[9,10,12,16,18,20] described permanent stoma as the most frequent approach, whereas

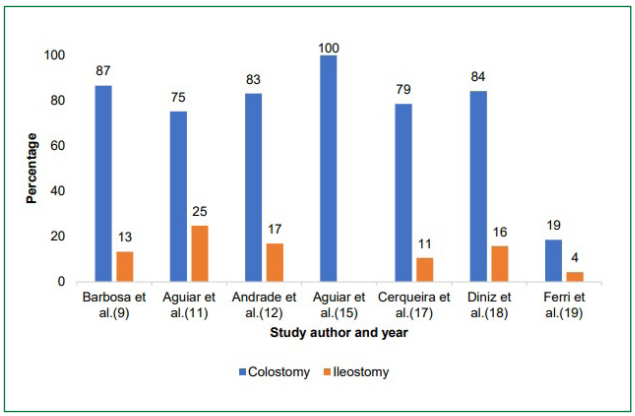
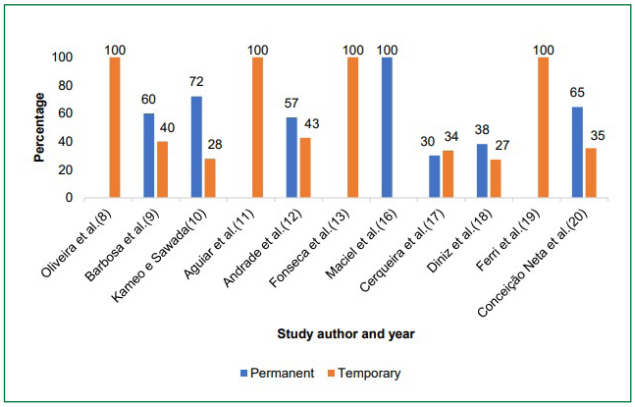


Figure 5 – Studies reviewed according to colostomy and ileostomy rates. Brazil, January/2011 to September/2021.



Brazil, January/2011 to September/2021.

Figure 6 – Studies reviewed according to rates of permanent and temporary stomas.

five[8,11,13,17,19] studies reported temporary stoma as the most common. Permanent stoma rates ranged from 30.2%[17] to 100.0%[16], while temporary stoma rates ranged from 27.2[18]–100.0%[8,11,13,19].

A wide range of complications of intestinal stomas were reported in five articles[8,13,17-19], including peristomal dermatitis, retraction, prolapse, mucocutaneous detachment, granuloma, parastomal hernia, hyperemia, bleeding, anastomotic dehiscence , wall abscess, post-operative ilium, intestinal obstruction, evisceration, surgical site infection and enterocutaneous fistula, as shown in Chart 6.

Two studies[17,18] reported the same intestinal stoma complications (Figure 7). Peristomal dermatitis was the most common complication, followed by parastomal hernia, retraction and prolapse. The complications observed by Cerqueira et al.[17] were peristomal dermatitis (17.3%), parastomal hernia (7.1%), prolapse (8.2%) and retraction

Chart 6 – List of articles reviewed according to intestinal stoma complications. Brazil, January/2011 to September/2021.

Identification of article	Stoma complications (%)
Oliveira et al.[8]	Infection of surgical site: 10.8 Anastomotic dehiscence: 8.4 Enterocutaneous fistula: 3.6 Evisceration: 1.2 Intestinal obstruction: 1.2
Fonseca et al.[13]	Leakage: 7.7 Dehiscence and evisceration: 5.1 Intestinal obstruction: 2.6 Site infection: 2.6
Cerqueira et al.[17]	Peristomal dermatitis: 17.3 Granuloma: 8.6 Prolapse: 8.2 Parastomal hernia: 7.1 Hyperemia: 5.9 Retraction: 4.7 Bleeding: 4.3
Diniz et al.[18]	Peristomal dermatitis: 54.4 Parastomal hernia: 14.0 Retraction: 13.2 Prolapse: 8.8 Mucocutaneous detachment 1.7
Ferri et al.[19]	Anastomotic dehiscence: 9.0 Wall or intra-abdominal abscess: 8.3 Post-operative ilium: 4.3 Post-operative bleeding: 2.7 Abdominal wall dehiscence: 1.9 Intestinal obstruction: 1.5 Iatrogenic intestinal lesion: 1.1

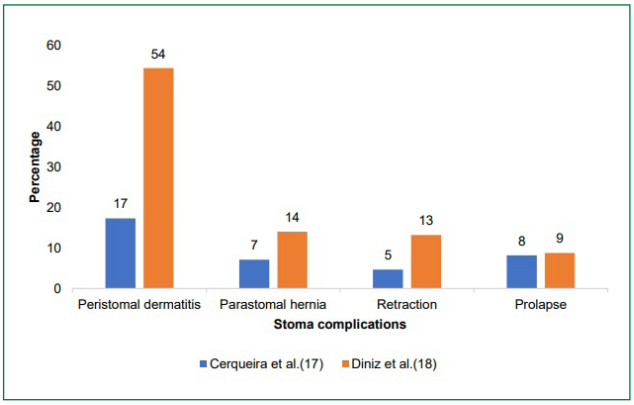


Figure 7 – Studies reviewed according to rates of stoma complications. Brazil, January/2011 to September/2021.

(4.7%). Diniz et al, 2020[18] observed peristomal dermatitis (54.4%), hernia parastomal (14.0%), retraction (13.2%), and prolapse (8.8%).

Three studies analyzed mortality in intestinal stoma patients, reporting rates of 1.2[8], 2.0[19] and 7.7%[13] (Figure 8).

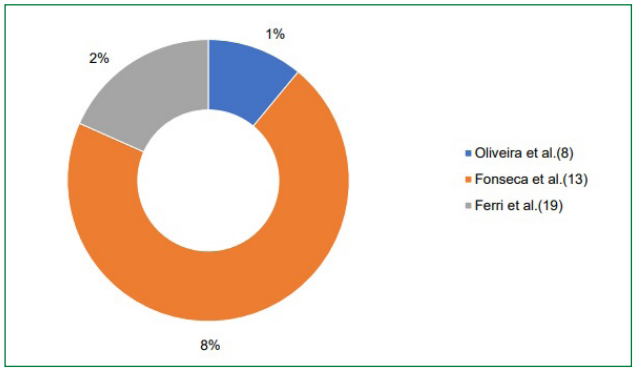


Figure 8 – Studies reviewed according to mortality in intestinal stoma. Brazil, January/2011 to September/2021.

DISCUSSION

In the studies reviewed, the prevalence of stoma was slightly higher in men than in women. This gender difference might be explained by the fact that males are more exposed to external causes, such as urban violence and trauma, situations which can require stoma construction[21,22]. Another reason for this disparity may be that men have a lesser tendency to seek health services for the prevention of problems compared with women, seeking specialist care only in cases of disease progression or exacerbation[23].

The studies showed that men are more afflicted by health problems than women given the relationship between the construction of masculinity and impairment of health, and the role of work in building the identity of men as the provider. Thus, many problems may stem from health promotion and disease intervention[24].

In the studies reviewed, most intestinal stoma patients were aged >60 years, a finding possibly explained by lower use of Primary Care for prevention, with individuals only seeking medical care upon the development or worsening of disease[22].

In terms of marital status, living with a partner proved an important factor for fostering positive attitudes in response to the disease. Thus, having a partner helped patients cope with the difficulties arising from intestinal stroma, perform care procedures, and build self-esteem[25].

In the studies analyzed, most patients were retired, explained by the older age group (>60 years)[5]. In Brazil, individuals with cancer have the right to claim retirement benefits, provided they are covered by the social welfare system and require permanent care of others. Under Brazilian law, the disability pension is 25% higher for the situations outlined in annex I of Ruling 3.048/99[26]. The studies also reported the educational level of patients, information that is important to allow adoption of plain, clear and objective language, both with patient and family member, thereby ensuring understanding of the information needed to perform self-care[27].

Another aspect revealed by the articles was the income of ostomates, a noteworthy factor because patients with low economic level face greater difficulties accessing appliances and equipment, increasing the risk of peristomal complications. Therefore, promoting self-care guidance becomes especially important, along with decentralizing of the care service to other cities in the state, thereby ensuring consistent follow-up for these patients based on routine visits[28]. In colorectal cancer patients, surgical treatment is the most widely used approach, often associated with construction of temporary or permanent intestinal stoma[5].

The studies also revealed that the main options of intestinal stoma constructions were colostomy or ileostomy. The difference between these approaches hinges on the site of the stoma, where procedures involving the distal segment of the small intestine are denoted ileostomies and those for the large intestine colostomies. These approaches are often employed in cases of colon and rectal cancer, inflammatory diseases, traumatic injuries and to protect an anastomosis after surgical procedures[29].

The studies revealed the mean time for closure of temporary colostomy. Although an interval of 90-120 days can be found in the literature, this period can be prolonged to 1-2 years owing to high demand[30].

With respect to complications secondary to stoma, the studies cited peristomal dermatitis, caused by contact of effluent or products with the skin surrounding the stoma. These types of agents disrupt the skin´s defense mechanism allowing noxious substances to penetrate and inflammation to develop. The most common causes of dermatitis due to pressure or friction are abrasive cleaning or ripping appliance off, persistent friction or pressure of bad fitting appliance, and frequent pouch changes[29].

Another complication cited by the studies was parastomal hernia, caused when there is a space between the intestinal segment forming the stoma and the surrounding tissue, producing a defect, resulting from a total or partial protrusion at the stoma base. Corrective surgery is recommended only when the hernia severely impacts activities of daily living[29].

Some of the studies reported stoma retraction as a complication. This issue can arise due to poor fixation or insufficient externalization of the intestinal loop, and is characterized by shifting of the stoma into the abdominal cavity. Robust fixation can help prevent this problem[29].

Another complication cited by the articles reviewed was prolapse, defined as externalization of loose intestinal segments, distal from anatomic fixation, a phenomenon generally associated with paracolostomy hernias. This can involve the abdominal wall, where the bowel segment used for the stoma is too long, or the peritoneal cavity, when fixation fails and the intestinal loop slides through the abdominal wall due to factors which increase intra-abdominal pressure. This complication can be avoided by proper placement of stoma within the limits of the rectus abdominis muscles through careful pre-operative marking[27,31].

Some of the studies described granuloma as a complication after intestinal stoma construction. Granuloma is an inflammatory reaction caused by friction of the tube in the stoma and can manifest immediately or later post-operatively at single or multiple points or around the whole stoma. This problem can be treated by applying corticosteroid creams or polyurethane foam and chemical cauterization using silver nitrate sticks or electrocautery[32].

Bleeding (hemorrhage) was another complication cited. This issue can occur in the first few hours after stoma construction, generally as a result of inadequate hemostasis. In the event of continuous abundant bleeding, a further surgical intervention is recommended[29].

Hyperemia around the intestinal stoma was also reported in the articles. This problem can be caused by poorly fitting appliances and devices used in the stomas. Pouches which need frequent can often lead to removal of the skin´s protective layer, causing hyperemia and erosions, an issue avoidable by correct pouching and active involvement of patients in self-care[21,28].

Mucocutaneous detachment was mentioned as a complication of intestinal stoma by some of the studies. This involves separation of the stoma from the surrounding skin and may be caused by suture strain, healing problems, infection or necrosis, retraction, disappearance or major reduction of the stoma at the skin line of the abdomen. This problem can be prevented by careful preoperative marking of the stoma, in addition to care by a WOC nurse[33].

CONCLUSIONS

The review of the 14 articles revealed the sociodemographic profile of adult patients with intestinal stomas as predominantly male, aged > 60 years, retired, living with a partner, educated to primary level and having a family income of one minimum wage or less. In terms of clinical profile of patients, colorectal cancer proved the most common indication for permanent or temporary colostomies, complications predominantly involved the stoma itself, and mortality rate was low.

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