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## Original Article

# Association of sociodemographic and clinical factors with self-image, self-esteem and locus of health control in people with an intestinal stoma

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### ABSTRACT

**Objective:** To evaluate the sociodemographic and clinical factors related to patients with an intestinal stoma and to correlate them with locus of health control, self-esteem and self-image.

**Method:** 44 patients with an intestinal stoma participated in the study. The following instruments were used: Scale for Locus of Health Control, Rosenberg Self-Esteem Scale/UNIFESP-EPM and Body Investment Scale.

**Results:** With regard to Locus Health Control variables, sociodemographic variables with alterations were: unemployed (28.13); retirees (27.79); age up to 50 years (28.44); and singles (27.89). Regarding Body Investment Scale, the sociodemographic variables with alterations were: age up to 50 years (21.79); single (19.15) or married (17.53); retired (18.79) or unemployed (19.83); and can read and write (20.13). Regarding Rosenberg-EPM Self-esteem Scale, all sociodemographic variables were altered.

**Conclusions:** Ostomized patients presented alterations in the following variables: unemployed, retired, aged up to 50 years and unmarried. There were also alterations in individuals whose cause of the stoma was neoplasia, a temporary stoma, stoma time <4 years, and ostomized non-participants of an association or support group, and who also did not practice physical activities. We conclude from these findings that ostomized individuals who participated in the study and who were included in these variables showed negative feelings about their body and believed that only they could control their health and that the people involved in their care and rehabilitation did not could contribute to their improvement.

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## Associação dos fatores sociodemográficos e clínicos com a autoimagem, autoestima e Locus de controle em saúde nos indivíduos com estoma intestinal

### R E S U M O

#### Palavras-chave:

Ostomia  
Estomas cirúrgicos  
Autoimagem  
Autoestima

**Objetivo:** Avaliar os fatores sociodemográficos e clínicos relativos aos pacientes com estoma intestinal e correlacioná-los a locus de controle da saúde, autoestima e autoimagem.

**Método:** 44 pacientes com estoma intestinal participaram do estudo. Foram utilizados os seguintes instrumentos: Escala para Locus de Controle da Saúde, Escala de Autoestima de Rosenberg/UNIFESP-EPM e Escala de Investimento no Corpo.

**Resultados:** Com relação às variáveis da Escala Locus de Controle da Saúde, as variáveis sociodemográficas com alteração foram: (28,13) desempregados; (27,79) aposentados; (28,44) idade até 50 anos; e (27,89) solteiros. Com relação à Escala de Investimento no Corpo, as variáveis sociodemográficas com alteração foram: (21,79) idade até 50 anos; (19,15) solteiros ou (17,53) casados; (18,79) aposentados ou (19,83) desempregados; e (20,13) sabem ler e escrever. Com relação à Escala de Autoestima de Rosenberg-EPM, todas as variáveis sociodemográficas estavam alteradas.

**Conclusões:** Os ostomizados apresentaram alterações nas variáveis desempregados, aposentados, idade até 50 anos e solteiros. Também apresentaram alterações indivíduos cuja causa do estoma era neoplasia, caráter temporário do estoma, tempo de estoma <4 anos e ostomizados não participantes de associação ou grupo de apoio e que também não praticavam atividades físicas. Concluimos, por esses achados, que os indivíduos ostomizados que participaram do estudo e que faziam parte dessas variáveis demonstravam sentimentos negativos com relação a seu corpo e acreditavam que só eles podiam controlar sua saúde, e que as pessoas envolvidas em seus cuidados e reabilitação não podiam contribuir para sua melhora.

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## Introduction

A stoma is a word from Greek and means “an opening” or “mouth”. The word is used to denote the exteriorization of any hollow viscera through the body, and this opening can be created for various causes. Depending on the part of the body from which it originates, the opening is given different names, and tracheostomies, gastrostomies, esophagostomies, colostomies, jejunostomies, ileostomies, and vesicostomies are considered as stomas.<sup>1</sup>

When subjected to the creation of an intestinal stoma (colostomy or ileostomy), the patient undergoes a surgical procedure, in which the physician externalizes the intestine through an orifice in the abdomen.<sup>2-4</sup> This procedure is done so that the function of elimination is maintained and provokes several changes, for instance, the elimination of gasses, odor, and feces through the stoma which is located in the abdomen.

In addition to the loss of control of eliminations and the need to use a fecal collecting device, there is a constant fear of not being able to resume those activities of daily living practiced prior to the stoma. This health problem can lead the individual to changes in his/her quality of life, body image, self-esteem, and sexuality, with interference in interpersonal relations and with negative repercussions on physical health. For these reasons, in many cases, the patient ends up feeling frustrated, afraid and feeling useless. Such feelings have the

consequence of social and family isolation, the abandonment of leisure and of emotional and psychological suffering.<sup>5-11</sup>

The concept of self-esteem has been studied and considered as an important indicator of mental health. In general, the criticism emphasizes the necessity of applying precise instruments that allow an evaluation of the degree of self-esteem of each individual. It is important to keep in mind that self-image is a condition of the person's own organization, consisting of a more real besides a more subjective part, and leading to a determinant way and an understanding of the environment in which one lives.<sup>11,12</sup>

In addition to facing changes in self-image, changes in sexual activity, and social and family isolation, the ostomized person has other concerns about events that may occur, such as complications of the stoma, especially problems in the loss of peristomal skin integrity, changes in patterns of elimination, and evacuation through the abdomen, leakage of secretions around the pouch, presence of odor and gas elimination, changes in eating habits, peristomal skin-related hygiene, and self-care.<sup>5,6</sup> In such circumstances, by experiencing these complications these patients they end up feeling stolen and scared and thus stop their self-care, and on many occasions lose their hope of healing or improvement. Some patients even fail to believe that professionals and family members involved in their care and guidance are not able to help them in their rehabilitation, improvement or healing.

It is often essential the understanding and support from family and friends, and especially from the professional who

should guide the patient and his/her family in the ways of performing self-care, i.e., peristomal skin care and hygiene, such as making bag exchanges, etc. In short, this is a period of difficult adaptation for the ostomized patient in his/her new life.<sup>13-18</sup>

Nurses who work with ostomized people should place them at the center of a holistic and globalized care process and consider them as active agents, participants in the rehabilitation process, eliminating the passive image of simple care receptacles; in this way, the educational action can materialize in a reflective way, within the cultural universe of these individuals, with whom the learning is shared.<sup>19</sup>

In this context of complexity and problems faced by ostomized individuals, a study of aspects of health control by these people, in relation to their self-esteem and self-image, will provide relevant information that may influence self-care of ostomized people and help him to accept this new condition and to live with the stoma. In this sense, this research aims to evaluate sociodemographic and clinical factors related to patients with an intestinal stoma and to correlate them to the locus of Health Control, self-esteem and self-image.

## Method

This is a descriptive, cross-sectional and analytical study. This study was carried out in the Ostomized Pole of the city of Pouso Alegre, after approval by the Research Ethics Committee of the Faculty of Health Sciences “Dr. José Antônio Garcia Coutinho”, opinion number 620,459. Thirty-four patients with an intestinal stoma were included in the study. The sample was selected in a non-probabilistic way, for convenience. The criteria for inclusion in the study were: age equal to or greater than 18 years and having an intestinal stoma. The exclusion criteria were: patients with dementia syndromes and other conditions that prevented them from understanding and answering the questionnaires.

Four data collection instruments were used: a questionnaire on sociodemographic data and questions related to the stoma, the Scale for Locus of Health Control, the Rosenberg Self-Esteem Scale/UNIFESP-EPM, and the Body Investment Scale.

The Scale for Locus of Health Control has been translated and validated into the Portuguese language by Rodriguez-Rosero.<sup>20</sup> The validation of the instrument, after application in four samples, was verified by the reliability (internal consistency) by Cronbach's alpha, with the following values for the subscales: internality for health, 0.62–0.71; externality – chance for health, 0.51–0.78 and externality – other powerful, 0.62–0.67. This scale consists of three subscales, each containing six items referring to dimensions: internality for health (items 1, 6, 8, 12, 13, and 17), in which the scores provide the degree to which the subject believes that he himself controls his state of health; externality- other powerful for health (items 3, 5, 7, 10, 14, and 18) where the scores provide the degree to which the individual believes that other persons or entities (physician, nurse, friends, family, God, etc.) can control his state of health; and externality

– chance for health (items 2, 4, 9, 11, 15, and 16), where the scores indicate the degree to which a person believes that his or her health is controlled at random, without self- or third parties' interference. The scores for each dimension vary from 1 to 5, with the following distribution for the alternatives: I totally agree, +5; I partially agree, +4; I cannot decide, +3; I partially disagree, +2; and I totally disagree, +1. The score obtained in the dimensions will be the sum of the items of the subscale in question. The sum of the values of the items belonging to each of the three subscales represents the total score referring to the dimension of the health locus in question. The total value obtained from each subscale can vary between 6 and 30 and indicates that the higher the value, the greater the belief in this dimension. The scale is presented *en bloc*, with intercalation of the subscale items.<sup>20</sup>

The Rosenberg-EPM Self-esteem Scale has been translated into Portuguese by Dini<sup>21</sup> and hold measurement properties such as reproducibility, validity and responsiveness. This scale is a specific instrument, with psychometric properties only for a characteristic, self-esteem, and is composed of 10 statements, which are subject to disagreement or agreement, in which the individual has four options of response ranging from “I fully agree” to “I fully disagree”. In items 1, 3, 4, 7 and 10, the “I fully agree” option refers to the highest self-esteem, and in items 2, 5, 6, 8 and 9, this option points to the lowest self-esteem. For each alternative, the patient examined should indicate only one response, according to what he/she is feeling at the moment of the test. Each response alternative receives a score ranging from 0 to 3; and these scores, along the 10 questions, will add up and represent the final score obtained from the questionnaire. The questionnaire score ranges from 0 to 30, where 0 is the best result and 30 is the worst state of self-esteem.<sup>21</sup>

The Brazilian version of the Body Investment Scale is composed of 20 items, divided into three factors (body image, body care, and body touch). The responses are arranged in a five-point Likert scale, ranging from “I strongly disagree” (1 point) to “I strongly agree” (5 points). To obtain the final scale score, the scores of items 2, 5, 9, 11, 13 and 17 should be reversed, followed by the sum of all items. The score ranges from 8 to 40 points. The higher the score, the greater the positive feeling in relation to the body. The data were submitted to an Exploratory Factor Analysis, with Varimax rotation. Of the 24 original items, 20 items were maintained in the Brazilian scale, and 4 factors explained 36.3% of the total variance of the scale. The internal consistencies obtained were: factor 1 (Body Image),  $\alpha=0.81$ ; factor 2 (Body Care),  $\alpha=0.70$ ; factor 3 (Body Touch),  $\alpha=0.66$ ; factor 4 (Body Protection),  $\alpha=0.37$ .<sup>22</sup>

To analyze the results, the data were entered and analyzed in the SPSS-8.0 statistical program. For the analysis of the data obtained, the following statistical tests were used: for the distribution of absolute ( $n$ ) and relative frequencies (%), the Pearson Chi-squared test was applied to determine if the distribution was different from 5% that is,  $p \leq 0.05$ . The comparison between two groups was done using the Mann-Whitney test, and when there were more than two groups, the Kruskal-Wallis test was used.

**Table 1 – Results obtained in mean scores of the Scale for Locus of Health Control, Rosenberg-EPM Self-esteem Scale and Body Investment Scale in individuals with an intestinal stoma.**

| Descriptive level  | Scale for Locus of Health Control | Rosenberg-EPM self-esteem scale | Body Investment Scale |
|--------------------|-----------------------------------|---------------------------------|-----------------------|
| Mean               | 59.65                             | 27.66                           | 31.60                 |
| Median             | 60.00                             | 29.00                           | 30.00                 |
| Standard deviation | 5.061                             | 3.791                           | 8.799                 |
| Minimum            | 45                                | 19                              | 35                    |
| Maximum            | 60                                | 40                              | 40                    |
| p-Value            | 0.038 <sup>a</sup>                | 0.049 <sup>a</sup>              | 0.045 <sup>a</sup>    |

Kruskal-Wallis test, Pearson's Chi-squared test.  
<sup>a</sup> Statistical significance ( $p \leq 0.05$ ).

## Results

**Table 1** presents the means of the scales: Health Control Locus (59.65), Rosenberg-EPM Self-esteem Scale (27.66) and Body Investment Scale (31.60). Statistical significance was found in all variables.

**Table 2** shows the means of the total scores for the Scales for Locus of Health Control: Internality for health (22.68), Externality "other powerful" (20.68) and Externality – chance for health (17.77). Regarding the dimensions of the Body Investment Scale, the means were: for Body Image, (11.64); for Body Care, (20.58); and for Body Touch, (38.54). There was statistical significance in all variables.

**Table 3** shows the means for the Locus Health Control Scale; the ostomized individuals presented alterations in the means of the following variables: unemployed (28.13); retired (27.79); up to 50 years of age (28.44) and single (27.89). In relation to the variables with alterations in the Body Investment Scale, their means were: age up to 50 years (21.79); single (19.15) or married (17.53); and retired (18.79) or unemployed (19.83); and be able to read and write (20.13). As for the Rosenberg-EPM Self-esteem Scale means, all sociodemographic variables were altered.

**Table 4**

shows the means for the Locus Health Control Scale; the ostomized individuals presented alterations in the following variables: the cause of the stoma was neoplasia (27.97); a temporary stoma (21.63); stoma time <4 years (23.09); ostomized patient who does not participate in an association or support group (20.63); and patient who does not practice physical activity (38.67). In relation to the means that were altered for the Body Investment Scale, the variables were: the cause of the stoma was neoplasia (19.43); type of stoma for colostomy (23.23) and ileostomy (21.63); a temporary stoma (17.53); with a stoma for more than 4 years (19.23); ostomized patient who does not participate in an association or support group (20.63); and patient who does not practice physical activity (17.25). Regarding the means for the Rosenberg-EPM Self-esteem Scale, all variables related to the character of the stoma presented alteration.

## Discussion

In relation to the mean score of the tools used in this study, the means were: for the Scale for Locus of Health Control=(59.65); for the Body Investment Scale=(30.60); and for the Rosenberg-EPM Self-esteem Scale=(27.66). These results mean that ostomized participants in this study presented alterations in self-esteem and in body image; that is, these individuals have shown negative feelings about their body, but believe that they can control their health, and that the people involved in their care and rehabilitation cannot contribute to their improvement.

Ostomization means the amputation of a part of the body, with alteration of the self-image of its carriers, allied to the body. The human being needs a certain amount of time for his mourning period, that is, he needs to reform his concepts, to measure his losses, and to find the strength to reorganize his way of life as a bearer of an ostomy and as dependent on a collection bag adhered to his abdomen.<sup>23-27</sup>

In one study, their authors investigated the quality of life and self-esteem in patients with an intestinal stoma; the means for the Rosenberg/UNIFESP-EPM Self-Esteem Scale and

**Table 2 – Results obtained in mean scores of the Scale for Locus of Control of Cure, Rosenberg-EPM Self-esteem Scale and Body Investment Scale in individuals with an intestinal stoma.**

| Dimensions                   | Scale for Locus of Health Control |        |                    |         |         |                    |
|------------------------------|-----------------------------------|--------|--------------------|---------|---------|--------------------|
|                              | Mean                              | Median | Standard deviation | Minimum | Maximum | p-Value            |
| Internality for health       | 22.68                             | 23.00  | 2.466              | 16      | 28      | 0.038 <sup>a</sup> |
| Externality "other powerful" | 20.68                             | 20.00  | 4.208              | 12      | 29      | 0.027 <sup>a</sup> |
| Externality for health       | 17.77                             | 15.0   | 5.644              | 19.0    | 20      | 0.035 <sup>a</sup> |
| Body Investment Scale        |                                   |        |                    |         |         |                    |
| Body image                   | 11.64                             | 11.00  | 1.753              | 10      | 16      | 0.021 <sup>a</sup> |
| Body care                    | 20.58                             | 19.5   | 5.265              | 18      | 20      | 0.019 <sup>a</sup> |
| Body touch                   | 38.54                             | 38.0   | 3.989              | 37      | 39      | 0.020 <sup>a</sup> |

Mann-Whitney test, Pearson's Chi-squared test.  
<sup>a</sup> Statistical significance ( $p \leq 0.05$ ).

**Table 3 – Mean of the Scale for Locus of Health Control, Rosenberg-EPM Self-esteem Scale and Body Investment Scale total scores in relation to the sociodemographic data of patients with an intestinal stoma.**

| Tool                                       | Age range             |        |                    |                              |        |                    |                    |        |                    | p-Value            |
|--|-----------------------|--------|--------------------|------------------------------|--------|--------------------|--------------------|--------|--------------------|--------------------|
|  | Up to 50 years        |        |                    | 51–69 years                  |        |                    | Over 70 years      |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation | Mean               | Median | Standard deviation |                    |
| Scale for Locus of Health Control          | 28.44                 | 30.0   | 2.744              | 60.00                        | 60.0   | 6.742              | 59.75              | 60.0   | 8.888              | 0.455              |
| Rosenberg-EPM Self-esteem Scale            | 29.06                 | 30.0   | 4.139              | 27.36                        | 29.0   | 3.414              | 26.5               | 27.5   | 4.690              | 0.272              |
| Body Investment Scale                      | 21.79                 | 20.0   | 3.806              | 34.3                         | 32     | 7.581              | 30.29              | 31.0   | 5.809              | 0.039 <sup>a</sup> |
| Tool                                       | Gender                |        |                    |                              |        |                    | p-Value            |        |                    |                    |
|  | Male                  |        |                    | Female                       |        |                    |                    |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation |                    |        |                    |                    |
| Scale for Locus of Health Control          | 55.84                 | 68.5   | 7.406              | 60.00                        | 60.0   | 7.971              | 0.039 <sup>a</sup> |        |                    |                    |
| Rosenberg-EPM Self-esteem Scale            | 27.78                 | 28.0   | 4.387              | 27.58                        | 29.5   | 3.408              | 0.869              |        |                    |                    |
| Body Investment Scale                      | 19.50                 | 20.0   | 4.934              | 39.0                         | 38.0   | 5.169              | 0.015 <sup>a</sup> |        |                    |                    |
| Tool                                       | Marital status        |        |                    |                              |        |                    |                    |        |                    | p-Value            |
|  | Single                |        |                    | Married                      |        |                    | Widow(er)          |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation | Mean               | Median | Standard deviation |                    |
| Total of Scale for Locus of Health Control | 27.89                 | 29.5   | 3.804              | 63.63                        | 63.0   | 8.002              | 62.50              | 64.0   | 7.653              | 0.497              |
| Rosenberg-EPM Self-esteem Scale            | 28.63                 | 30.0   | 3.503              | 27.47                        | 29.0   | 3.980              | 27.33              | 28.5   | 3.559              | 0.735              |
| Body Investment Scale                      | 19.15                 | 20.0   | 7.355              | 17.53                        | 18.0   | 3.980              | 39.67              | 33     | 5.391              | 0.523              |
| Tool                                       | Schooling             |        |                    |                              |        |                    | p-Value            |        |                    |                    |
|  | Can read and write    |        |                    | Incomplete elementary school |        |                    |                    |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation |                    |        |                    |                    |
| Total of Scale for Locus of Health Control | 63.58                 | 65.0   | 7.890              | 26.72                        | 30.0   | 4.067              | 0.263              |        |                    |                    |
| Rosenberg-EPM Self-esteem Scale            | 26.89                 | 28.0   | 3.563              | 29.75                        | 29.5   | 3.791              | 0.366              |        |                    |                    |
| Body Investment Scale                      | 20.13                 | 20.0   | 4.936              | 40.17                        | 39.5   | 6.809              | 0.768              |        |                    |                    |
| Tool                                       | Occupation            |        |                    |                              |        |                    |                    |        |                    | p-Value            |
|  | Retired               |        |                    | Unemployed                   |        |                    | Working            |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation | Mean               | Median | Standard deviation |                    |
| Total of Scale for Locus of Health Control | 27.79                 | 28     | 4.129              | 28.13                        | 30.0   | 3.939              | 64.75              | 62.0   | 7.025              | 0.759              |
| Rosenberg-EPM Self-esteem Scale            | 28.13                 | 30.0   | 3.939              | 26.0                         | 26.0   | 3.317              | 26.88              | 27.5   | 3.441              | 0.421              |
| Body Investment Scale                      | 18.79                 | 19.5   | 4.904              | 19.83                        | 20.5   | 6.555              | 39.23              | 39.0   | 5.824              | 0.024 <sup>a</sup> |
| Tool                                       | Family income         |        |                    |                              |        |                    | p-Value            |        |                    |                    |
|  | Up to 3 minimum wages |        |                    | Over 3 minimum wages         |        |                    |                    |        |                    |                    |
|  | Mean                  | Median | Standard deviation | Mean                         | Median | Standard deviation |                    |        |                    |                    |
| Total of Scale for Locus of Health Control | 61.1                  | 61.0   | 7.677              | 66.55                        | 66.0   | 8.407              | 0.078              |        |                    |                    |
| Rosenberg-EPM Self-esteem Scale            | 27.79                 | 2.0    | 4.129              | 27.27                        | 27.0   | 2.649              | 0.701              |        |                    |                    |
| Body Investment Scale                      | 62.03                 | 61.0   | 7.607              | 38.82                        | 38.0   | 5.736              | 0.027 <sup>a</sup> |        |                    |                    |

Pearson's Chi-squared test, Kruskal–Wallis test.

<sup>a</sup> Statistical significance  $p < 0.05$ .

**Table 4 – Mean of total score of the Scale for Locus of Health Control, Rosenberg-EPM Self-esteem Scale and Body Investment Scale in relation to ostomy data of patients with an intestinal stoma.**

| Tool                                       | Cause of stoma application                 |        |                    |           |        |                    |                  |        |                    | p-Value            |        |         |                    |
|--|--|--------|--------------------|-----------|--------|--------------------|------------------|--------|--------------------|--------------------|--------|---------|--------------------|
|  | Neoplasia                                  |        |                    |           |        |                    | Other            |        |                    |                    |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation |                  |        |                    |                    |        |         |                    |
| Total of Scale for Locus of Health Control | 27.97                                      | 30.0   | 4.146              | 61.78     | 61.0   | 8.228              |                  |        |                    | 0.671              |        |         |                    |
| Rosenberg-EPM Self-esteem Scale            | 28.44                                      | 30.0   | 2.744              | 27.62     | 29.0   | 9.761              |                  |        |                    | 0.557              |        |         |                    |
| Body Investment Scale                      | 19.43                                      | 20.5   | 4.540              | 37.0      | 39.0   | 8.960              |                  |        |                    | 0.026 <sup>a</sup> |        |         |                    |
| Tool                                       | Stoma type                                 |        |                    |           |        |                    |                  |        |                    | p-Value            |        |         |                    |
|  | Colostomy                                  |        |                    |           |        |                    | Ileostomy        |        |                    |                    |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation |                  |        |                    |                    |        |         |                    |
| Total of Scale for Locus of Health Control | 63.44                                      | 64.0   | 8.080              | 60.13     | 60.0   | 8.080              |                  |        |                    | 0.297              |        |         |                    |
| Rosenberg-EPM Self-esteem Scale            | 27.89                                      | 29.5   | 3.804              | 26.63     | 27.5   | 3.777              |                  |        |                    | 0.400              |        |         |                    |
| Body Investment Scale                      | 23.23                                      | 25.0   | 4.974              | 21.63     | 20.0   | 6.209              |                  |        |                    | 0.076              |        |         |                    |
| Tool                                       | Stoma character                            |        |                    |           |        |                    |                  |        |                    | p-Value            |        |         |                    |
|  | Definitive                                 |        |                    |           |        |                    | Temporary        |        |                    |                    |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation |                  |        |                    |                    |        |         |                    |
| Total of Scale for Locus of Health Control | 63.70                                      | 64.0   | 8.395              | 21.63     | 20.0   | 6.209              |                  |        |                    | 0.227              |        |         |                    |
| Rosenberg-EPM Self-esteem Scale            | 27.67                                      | 30.0   | 4.146              | 27.36     | 29.0   | 2.580              |                  |        |                    | 0.768              |        |         |                    |
| Body Investment Scale                      | 39.55                                      | 38.0   | 5.869              | 17.53     | 18.0   | 3.980              |                  |        |                    | 0.013 <sup>a</sup> |        |         |                    |
| Tool                                       | Diameter                                   |        |                    |           |        |                    |                  |        |                    | p-Value            |        |         |                    |
|  | 0–20 cm                                    |        |                    | 20–40 cm  |        |                    | >40 cm           |        |                    |                    |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation | Mean             | Median | Standard deviation |                    |        |         |                    |
|  |  |        |                    |           |        |                    |                  |        |                    |                    |        |         |                    |
| Total of Scale for Locus of Health Control | 56.33                                      | 69.0   | 8.327              | 60.13     | 57.5   | 8.391              | 64.32            | 65.0   | 9.976              | 0.059 <sup>a</sup> |        |         |                    |
| Rosenberg-EPM Self-esteem Scale            | 26.27                                      | 27.0   | 3.968              | 25.0      | 25.0   | 5.000              | 29.25            | 29.0   | 1.035              | 0.195              |        |         |                    |
| Body Investment Scale                      | 21.42                                      | 23.0   | 6.788              | 24.78     | 25.0   | 4.627              | 36.10            | 37.09  | 4.400              | 0.047 <sup>a</sup> |        |         |                    |
| Tool                                       | Device type                                |        |                    |           |        |                    |                  |        |                    | p-Value            |        |         |                    |
|  | One-piece device                           |        |                    |           |        |                    | Two-piece device |        |                    |                    |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation |                  |        |                    |                    |        |         |                    |
| Total of Scale for Locus of Health Control | 60.85                                      | 63.0   | 5.713              | 62.95     | 64.0   | 8.559              |                  |        |                    | 0.709              |        |         |                    |
| Rosenberg-EPM Self-esteem Scale            | 28.92                                      | 30.0   | 4.641              | 27.19     | 29.0   | 3.383              |                  |        |                    | 0.181              |        |         |                    |
| Body Investment Scale                      | 24.15                                      | 26.0   | 5.786              | 23.51     | 24.0   | 5.170              |                  |        |                    | 0.401              |        |         |                    |
| Tool                                       | Stoma use (in years) (range)               |        |                    |           |        |                    |                  |        |                    |                    |        | p-Value |                    |
|  | <4 years                                   |        |                    | 4–7 years |        |                    | 8–11 years       |        |                    | 12–21 years        |        |         |                    |
|  | Mean                                       | Median | Standard deviation | Mean      | Median | Standard deviation | Mean             | Median | Standard deviation | Mean               | Median |         | Standard deviation |
|  |  |        |                    |           |        |                    |                  |        |                    |                    |        |         |                    |
|  | Total of Scale for Locus of Health Control | 23.09  | 25.0               | 8.224     | 62.46  | 64.0               | 6.173            | 64.13  | 64.0               | 10.316             | 64.50  |         | 64.5               |
| Rosenberg-EPM Self-esteem Scale            | 29.88                                      | 29.0   | 5.987              | 28.54     | 29.0   | 2.989              | 38.75            | 39.5   | 2.550              | 17.39              | 18.0   | 3.513   | 0.017 <sup>a</sup> |
| Body Investment Scale                      | 19.33                                      | 20.0   | 7.355              | 43.11     | 43.0   | 7.339              | 40.23            | 39.0   | 5.823              | 39.48              | 38.0   | 3.951   | 0.032 <sup>a</sup> |

**Table 4 – (Continued)**

| Tool                                       | Participates in support association or group |        |                    |       |        |                    | p-Value            |
|--|--|--------|--------------------|-------|--------|--------------------|--------------------|
|  | Yes  |        |                    | No    |        |                    |                    |
|  | Mean   | Median | Standard deviation | Mean  | Median | Standard deviation |                    |
| Total of Scale for Locus of Health Control | 61.75  | 19.0   | 8.058              | 20.63 | 19.545 | 8.002              | 0.041 <sup>a</sup> |
| Rosenberg-EPM Self-esteem Scale            | 19.08  | 08.5   | 4.441              | 30.03 | 3.0    | 3.214              | 0.030 <sup>a</sup> |
| Body Investment Scale                      | 31.60  | 30.0   | 08.799             | 17.25 | 19.0   | 2.751              | 0.011 <sup>a</sup> |
| Tool                                       | Practice physical activity                   |        |                    |       |        |                    | p-Value            |
|  | Yes  |        |                    | No    |        |                    |                    |
|  | Mean   | Median | Standard deviation | Mean  | Median | Standard deviation |                    |
| Total of Scale for Locus of Health Control | 61.75  | 19.0   | 8.058              | 38.67 | 36.0   | 7.524              | 0.021 <sup>a</sup> |
| Rosenberg-EPM Self-esteem Scale            | 19.08  | 18.5   | 5.987              | 30.03 | 30.0   | 3.674              | 0.037 <sup>a</sup> |
| Body Investment Scale                      | 32.65  | 31.0   | 9.432              | 17.25 | 19.0   | 2.751              | 0.013 <sup>a</sup> |

Pearson's Chi-squared test, Kruskal-Wallis test.  
<sup>a</sup> Statistical significance  $p \leq 0.05$ .

for the Flanagan Life Quality Scale (EQVF) were, respectively, 10.81 and 26.16. Its authors concluded that individuals with an intestinal stoma had their self-esteem and quality of life impaired.<sup>9</sup> In another study evaluating body image and quality of life in 77 ostomized patients, the authors concluded that, when these patients receive an intestinal stoma, suffer a change in quality of life and present with a negative feeling about their body, and that such feelings lead the ostomized to social and family isolation and to the abandonment of leisure.<sup>5</sup>

In relation to the dimensions of the Scale for Locus of Health Control, we observed that, for the most part, the ostomized patients presented changes, with the following means for the total Scale for Locus of Health Control dimensions: Internality for health (22.68); Externality "other powerful" (20.68); and Externality for health (17.77). Regarding the dimensions of the Body Investment Scale, the means were: Body Image (11.64); Body Care (20.58); and Body Touch (38.54). These findings mean that the patients ostomized participating in this study do not believe that professionals, family members, and caregivers can contribute to their improvement or cure. They also do not accept that these professionals, caregivers, and relatives touch them. Anyway, their body image is altered.

Researchers analyzed subjective well-being and quality of life of ostomized patients from the south region of the state of Minas Gerais, and concluded that those individuals who participated in the study had negative feelings related to their body and suffered a decrease in quality of life. In addition, they verified that such feelings result in difficulties for ostomized patients in their rehabilitation and in the accomplishment of self-care.<sup>5</sup>

Beliefs influence ostomized individuals in the perception and expression of hope for their improvement or healing, courage to perform self-care, courage to react and fight against the prejudice and stigma they will face in their daily lives, and in how to deal with this in their interaction as ostomized

human beings,<sup>28-30</sup> besides causing absenteeism at work and even work loss in a productive age group.

Positive feelings about stoma preparation center themselves on survival, maintenance of life, and on the possibility of a continuity of personal projects; from this perspective, one can allude to the question of whether or not to stay at work; but it is possible that these people, by being inserted in a capitalist and productive society, value and want to resume their work activities, not to mention that the stoma is identified as a possibility of cure of their basic pathology.<sup>31</sup> Negative feelings regarding the stoma cover all the difficulties caused in the life of ostomized people, standing out the loss of the sphincter control and the dependence on a collector device, that represent discomfort and annoyances, and that is able to entail suffering and a feeling of mutilation.<sup>32</sup>

In the comparison between sociodemographic data and the dimensions of the Scale for Locus of Health Control, Body Investment Scale and Rosenberg-EPM Self-esteem Scale, male patients, aged up to 50 years, retired, single, and with an incomplete elementary school showed worse means in relation to other variables. But there was no change in the means for the Locus of Health Control Scale. Statistical significance was observed in all variables. These findings agree with the results of several published studies.<sup>5-9,11,13</sup>

The gender of the ostomized patient can influence his/her social adaptation. Women tend to require less time for rehabilitation, although demonstrate significant degrees of despair, depression, and fear in the preoperative period. On the other hand, men, especially those who develop sexual impotence, take more time to respond satisfactorily to routine activities and even present greater difficulties with self-care.<sup>33</sup> It is important to emphasize that the elderly have unique biological characteristics, being vulnerable to chronic-degenerative diseases, such as neoplasias.

Often older ostomized people refuse to accept their health conditions and thus tend to reject the treatment, which can

result in aggravation of their disability. In addition to the occupational and social impairment resulting from the changes resulting from the aging process, these people find themselves in an internal situation of self-abandonment, loss of self-esteem and isolation from society and the family environment, either because of shame or because they think they may bother, if they ask for help.<sup>27</sup>

The level of schooling is certainly a factor in the need for self-care of elderly ostomized individuals, since such people have to deal with medications, perform peristomal skin self-care, exchange the bag and follow diets – activities sometimes too complex. In such cases, this autonomy is often an important factor in their rehabilitation.

Compared to younger ostomized people, in general, elderly people with a stoma show more difficulties to implement this care. Beginning with surgery, these elderly people may present with many doubts about their health condition and in fear of the situation in which they are; some of them resist the guidelines received for their self-care; and they may also believe that their personal weaknesses make it impossible for them to achieve a new way of living and being healthy.<sup>34</sup>

Regarding the characteristics of the stomas, all variables presented alterations, but the patients whose cause of the stoma was neoplasia, had fewer than 4 years of stoma use, with a stoma measuring more than 40 cm, patients who did not participate in a support association or group, and patients who did not practice physical activities showed a worsening in their self-esteem and body image. Regarding other variables, a statistical difference was observed in all of them. Our findings agree with several other published studies.<sup>5,7-9,11,13,15</sup>

After receiving an intestinal stoma, the person experiences a difficult process, permeated by fears, constraints, discomforts, and doubts. In this process, the support of the family is indispensable, so that the ostomized individual, thus helped and strengthened, can regain his autonomy, re-signify his identity, improve his self-esteem, and promote his social reinsertion. Often family and friends take care of the ostomized person.<sup>14</sup> However, if they continue to do so for a long time, this may inhibit the process of transition to self-care, because the person may not become autonomous, becoming insecure and dependent.<sup>28</sup>

The support of family and friends in coping with the transition to self-care is an important constraint related to the community, since the ostomized person is inserted into this same community in his daily life. This support enables the ostomized person to visualize and help minimize his difficulties.<sup>28</sup>

In a study in which the authors evaluated the role of the nurse in the process of rehabilitation of ostomized people, it was concluded that the rehabilitation process of these clients, when elaborated in a holistic and systematized way through the application of the Nursing Process, becomes a motivating tool to their return to the activities of daily living, including work, because it is at this very moment that the guidelines will be initiated regarding self-care of the stoma and peristomal skin, which will show to the client that he can live with his stoma without major stresses. It is important to note that only after the adaptation to his new condition of life, the ostomized person will acquire confidence and feel safe to return to social activities and to his work.<sup>29</sup>

In another study, the authors concluded that nursing orientations for the ostomized individual or with chronic disease should be systematized and holistic, permeating all biopsychosocial aspects involved in the recovery of this population. The teaching of self-care, understood as the first step in the rehabilitation process, should also guide the orientations aimed at recovering the client's self-esteem, reinforcing the importance of social inclusion in his life. In this way, with the help of the nursing team and family members, ostomized people will be able to fight for a better quality of life, even in the presence of the stoma, and will realize that they can return to the innumerable activities of daily life and continue with their life plans.<sup>30,35-38</sup>

## Conclusions

With this study, we conclude that ostomized patients presented changes in the following variables: unemployed, retired, aged up to 50 years, and single. This was also observed in individuals whose stoma was caused by neoplasia, in those with a temporary stoma, with a stoma time of fewer than 4 years, in those non-participants in association or support group, and in those non-participants of physical activity. These findings mean that the ostomized individuals participating in the study and pertaining to these variables have negative feelings toward their body and believe that only they can control their health and that the people involved in their care and rehabilitation cannot contribute to their improvement.

## Conflicts of interest

The authors declare no conflicts of interest.

## REFERENCES

1. Santos VLCG. A estomaterapia através dos tempos. In: Cesaretti IUR, Santos VLCG, editors. *Assistência em estomaterapia: cuidando do ostomizado*. São Paulo: Atheneu; 2001. p. 1-17.
2. Mota MS, Gomes GC, Petuco VM, Heck RM, Barros EJJ, Gomes VLO, et al. Facilitators of the transition process for the self-care of the person with stoma: subsidies for Nursing. *Rev Esc Enferm USP*. 2015;49:82-8.
3. Ang SG, Chen HC, Siah RJ, Ele HG, Klainin-Yobas P. Stressors relating to patient psychological health following stoma surgery: an integrated literature review. *Rev Oncol Fórum Enferm*. 2013;40:587-94.
4. Altschuler A, Ramirez M, Grant M, Wendel C, Hornbrook MC, Herrinton L, et al. The influence of husbands 'or male partners' support on women's psychosocial adjustment to having an ostomy resulting from colorectal cancer. *J Wound Ostomy Continence Nurs*. 2009;36:299-305.
5. Costa VF, Alves SG, Eufrásio C, Salome GM, Ferreira LM. Body image and subjective well-being in ostomists in Brazil. *Gastrointest Nurs*. 2014;12:37-47.
6. Salomé GM, Almeida SA, Mendes B, Carvalho MRF, Junior MRM. Assessment of subjective well-being and quality of life in patients with intestinal stoma. *J Coloproctol*. 2015;35:168-74.



7. Salomé GM, Carvalho MRF, Massahud MR, Mendes B. Profile of ostomy patients residing in Pouso Alegre city. *J Coloproctol*. 2015;35:106–12.
8. Salomé GM, Almeida SA. Association of sociodemographic and clinical factors with the self-image and self-esteem of individuals with intestinal stoma. *J Coloproctol*. 2014;34:159–66.
9. Salomé GM, Almeida SA, Silveira MM. Quality of life and self-esteem of patients with intestinal stoma. *J Coloproctol*. 2014;34:231–9.
10. Moreira CNO, Marques CB, Silva MAP, Pinheiro FAM, Salomé GM. Association of sociodemographic and clinical factors with spirituality and hope for cure of ostomized people. *J Coloproctol*. 2016;36:162–72.
11. Jesus PBR, Santos I, Brandão ES. A autoimagem e a autoestima das pessoas com transtornos de pele: uma revisão integrativa da literatura baseada no modelo de Callista Roy. *Auichan*. 2015;15:75–9.
12. Salomé GM, Santos LF, Cabeceira HS, Panza AMM, Paula MAB. Knowledge of undergraduate nursing course teachers on the prevention and care of peristomal skin. *J Coloproctol*. 2014;34:224–30.
13. Martins PAF, Alvim NAT. Perspectiva educativa do cuidado de enfermagem sobre a manutenção da estomia de eliminação. *Rev Bras Enferm*. 2011;64:322–7.
14. Nascimento CMS, Trindade GLB, Luz MHBA, Santiago RF. Vivência do paciente estomizado: uma contribuição para a assistência de enfermagem. *Rev Texto Contexto – Enferm*. 2011;20:557–64.
15. Corrêa NF, de Brito MJ, de Carvalho Resende MM, Duarte MF, Santos FS, Salomé GM, et al. Impact of surgical wound dehiscence on health-related quality of life and mental health. *J Wound Care*. 2016;25:561–70.
16. Moreira CNO, Marques CB, Salomé GM, Cunha DR, Pinheiro FAM. Health locus of control, spirituality and hope for healing in individuals with intestinal stoma. *J Coloproctol*. 2016;36:208–15.
17. Carvalho SORM, Budó MLD, da Silva MM, Alberti GF, Simon BS. Com um pouco de cuidado a gente vai em frente” vivências de pessoas com estomia. *Rev Texto Contexto – Enferm*. 2015;24:279–87.
18. Mauricio V, Souza NVDO, Lisboa MTL. O sentido do trabalho para o ser estomizado. *Rev Texto Contexto – Enferm*. 2014;23:656–64.
19. Menezes APS, Quintana JFA. Percepção do indivíduo estomizado quanto à sua situação. *Rev Bras Prom Saúde*. 2008;21:13–8.
20. Rodríguez-Rosero JE, Ferriani MGC, Dela CMF. Escala de locus de controle da saúde – MHLC: estudos de validação. *Rev Latino – Am Enferm*. 2002;10:179–84.
21. Dini GM, Quaresma MR, Ferreira LM. Adaptação cultural e validação da versão Brasileira da Escala de Auto-estima Rosenberg. *Rev Soc Bras Cir Plas*. 2004;19:41–52.
22. Domansky RC, Santos VLC. Cross-cultural adaptation and validation of the Portuguese version of the bowel function in the community instrument. *J Wound Ostomy Continence Nurse*. 2007;34:671–7.
23. Mendes EV. O cuidado das condições crônicas na atenção primária à saúde: o imperativo da consolidação da estratégia da saúde da família. Brasília (DF): Organização Pan-Americana da Saúde; 2012.
24. Saraiva LEF, Medeiros LP, Melo MDM, Tiburcio MP, Costa IKF, Torres GV. Chronic health conditions related to quality of life for federal civil servants. *Rev Gaúcha Enferm*. 2015;36:35–41.
25. Salomé GM, Almeida AS, Ferreira LM. Association of sociodemographic factors with hope for cure. Religiosity, and spirituality in patients with venous ulcers. *Adv Skin Wound Care*. 2015;28:76–82.
26. Menezes APS, Quintana JF. A percepção do indivíduo estomizado quanto a sua situação. *Rev Bras Promoção Saúde*. 2008;21:13–8.
27. Barros EJJ, Santos SSC, Lunardi VL, Lunardi Filho WD. Ser humano idoso estomizado e ambientes de cuidado: reflexão sob a ótica da complexidade. *Rev Bras Enferm*. 2012;65:844–8.
28. Santana JCB, de Souza ÂB, Dutra BS. Percepções de um grupo de enfermeiras sobre o processo de cuidar de pacientes de estomia definitiva. *J Nurs UFPE Online*. 2011;5:1710–5.
29. Dela CMF. Escala multidimensional de locus de controle de Levenson. *Arq Bras Psicol*. 1987;39:79–87.
30. Martins ML, Perugini VC, Silva RDM. Processo de viver com estomia: facilidades e limites. *Rev Estima*. 2006;4:15–20.
31. Sales CA, Violin MR, Waidman MAP, Marcon SS, Silva MAP. Sentimentos de pessoas ostomizadas: compreensão existencial. *Rev Esc Enferm USP*. 2010;44:221–7.
32. Coelho AR, Santos FS, Poggetto MTD. A estomia mudando a vida: enfrentar para viver. *REME Rev Min Enferm*. 2013;17:258–67.
33. Macedo MS, Nogueira LT, Luz MHBA. Perfil dos estomizados atendidos em hospital de referência em Teresina. *Estima*. 2005;3:25–8.
34. Barros EJJ, Santos SSC, Gomes GC, Erdmann AL. Gerontotecnologia educativa voltada ao idoso estomizado à luz da complexidade. *Rev Gaúcha Enferm*. 2012;33:95–101.
35. Mota MS, Gomes GC, Petuco VM, Heck RM, Barros EJJ, Gomes VLO. Facilitators of the transition process for the self-care of the person with stoma: subsidies for Nursing. *Rev Esc Enferm USP*. 2015;49:82–8.
36. Mauricio VC, Oliveira NVD, Lisboa MTL. The nurse and her participation in the process of rehabilitation of the person with a stoma. *Rev Esc Anna Nery*. 2013;17:416–22.
37. Mendonça SN, Lameira CC, Souza NVDO, Costa CCP, Maurício VC, Silva PA. Guidelines for nursing and implications for the quality of life of stomized people. *Rev Enferm UFPE Online*. 2015;9 Suppl. 1:296–304.
38. Salomé GM, de Almeida AS, de Jesus PT, Massahud MRJ, de Oliveira MCN, de Brito MJA, et al. The impact of venous leg ulcers on body image and self-esteem. *Adv Skin Wound Care*. 2016;29:316–21.