

# **A minireview on an important human problem: the trauma related to the act of defecation and its terrible consequences**

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**Running title:** To shit or not to shit, that is the question

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**Defecation is an important and very frequent activity in the lifetime of human being. Several parameters (sex, age, weight and height of people, hair colour, and leg length) have been studied from physical, psychological, individual, and social points of view. Our results demonstrate that exists a relationship between the physical parameters studied and the behaviour related to defecation.**

## **INTRODUCTION**

Since human being appeared on the Earth million of years ago, obtaining nutrients to grow and develop has become one of his main absorptions, probably the most important one. In fact, life could be defined as a sort of competition where the best adapted organisms with respect to obtain nutrients get survive, while those not so prepared do not (1).

Nutritional function of the organism depends on three different but correlated systems: the digestive system, the respiratory system, and the excretory system (2). Capture, modification, and absorption of nutrients is carried out by the digestive system, which has been studied from different points of view in detail. Thus, main organs and their functional and physical properties are well-known. Moreover, several studies on the composition, physical appearance, aroma and fragrance of excrements have been done (3). However, any work related to the psychological aspects of the act of defecation and its consequences has not been published.

In order to educate the community on this black hole, several parameters and their

relationship with the necessary and never well-pondered act of defecation, including physical, psychological, individual, and social aspects are analyzed in this work.

## **RESULTS**

This study has been carried out by our collaborators in different places all around Spain (4). Physical parameters studied were sex, age, weigh and height of people, hair colour, and leg length.

Psychological effects of these parameters were inferred from a new satisfaction index, namely smiling arc ratio (SAR), a novel magnitude defined here as the lip curvature respect to the horizontal (expressed in degrees, from 0 to 90°). SAR values are positive for concave smiles (U), and negatives for convex smiles. Measuring were performed taking pictures in different times during the act of defecation (an illustration is shown in Figure). Once about 1,000 experimental subjects were analyzed and distributed within different groups according to their characteristics, mean and standard deviation of SAR values were calculated (see Table).

**Table.** Measures of the psychological effects in function of different parameters. SAR values are given as mean $\pm$ standard deviation (see text for details).

	Sex			Age (years)				Hair colour				Leg length <sup>3</sup>	
	male	female	n.d. <sup>2</sup>	0-3	4-12	13-49	50	brown	blond	green	red	60	>60
public <sup>1</sup>	-53 $\pm$ 12	-3 $\pm$ 9	-17 $\pm$ 6	31 $\pm$ 3	81 $\pm$ 6	-50 $\pm$ 9	-87 $\pm$ 6	-20 $\pm$ 3	-23 $\pm$ 9	90 $\pm$ 0	42 $\pm$ 4	-70 $\pm$ 2	-2 $\pm$ 20
own	73 $\pm$ 5	83 $\pm$ 1	55 $\pm$ 7	20 $\pm$ 1	-3 $\pm$ 1	55 $\pm$ 6	32 $\pm$ 23	30 $\pm$ 7	35 $\pm$ 4	90 $\pm$ 0	39 $\pm$ 5	-3 $\pm$ 15	60 $\pm$ 24
pot	-69 $\pm$ 5	-10 $\pm$ 3	-34 $\pm$ 8	61 $\pm$ 4	-80 $\pm$ 1	3 $\pm$ 52	42 $\pm$ 17	-10 $\pm$ 13	-8 $\pm$ 7	90 $\pm$ 0	49 $\pm$ 1	60 $\pm$ 10	-70 $\pm$ 12

<sup>1</sup> public, public bathroom; own, private/home bathroom; pot, chamber pot.

<sup>2</sup> n.d., non-defined-sex people.

<sup>3</sup> In cm, see text for details.



**Figure.** Illustration shows an experimental subject during the act of defecation. Pictures were taken using a one-dollar-camera dotted with an aquatic zoom, and at least 36 pictures were taken for each subject. Finally, all the pictures were digitally processed and SAR values were calculated.

With respect to sex, important differences were found in case of public bathroom. Although females spent prolonged periods of time in toilet, male's experiences were much more traumatic. These traumatic effects reverted when males used female's toilet. Differences did not occurred in case of own-bathrooms. Using chamber pot and traumatic effects were correlated in case of males as well. A particular group, namely non-defined-sex people, presented very variable behaviours. Although they often shown random reactions two subgroups were established: one of them with manners similar to male's and the other one tending to female's.

People were classified within four groups in function of their age (see Table). The only group

of people that liked and even delighted in use of public toilets were children from 4 to 12 years old. In the rest of cases this sort of toilets caused negative effects in the life-style of people. Furthermore, drastic and non-reversible effects were observed in two cases: one of them presented constant bad-tempered face, even listening jokes about Monica Lewinsky, and the other one always stayed at home walking and walking around the bathroom. Differences in using chamber pot were also seen in function of age. Thus, children from 0 to 3 years old, and people older than 50 liked this device, and even enjoyed it in case of the first group. On the contrary, children from 4 to 12 years old hated chamber pot, while very variable results were obtained for middle-aged people.

In respect of hair color, significant differences were detected in people with green hair, both in toilet and chamber pot using. These people manifested a very peculiar response: maximum positive SAR values and unequivocal pleasure features were exhibited in all cases. In case of brown or blond hair, non-significant differences were found. For red hair people, very variable results were obtained, depending on red hair was natural or stained. In case of natural color, values were similar to those of brown and blond hair people, while for stained people values were closer to green hair ones.

With regard to leg length, two different groups were performed: less than 60 cm and more than 60 cm legs, respectively, measured from hip to ankle. In this case, spectacular differences were retrieved between toilet and chamber pot employing. Thus, totally opposed

conducts were shown in both groups, preferring chamber pot in case of first group, and toilet use in the second group. Additionally, people with short legs exhibited differences to take into account when used public or own toilets, with a clear preference for own toilets.

The relationship between weigh and height of people and traumatic effects of defecation was not studied at all, as explain in the discussion.

## DISCUSSION

The act of defecation is a very important and frequent human activity, usually daily, sometimes twice or more a week (5). The importance of this fact is obvious, and very dangerous consequences occur when the defecatory machinery does not work (6). For this reason, important psychological alterations appear and life-style can change completely, and we are not speaking about haemorrhoids (7). However, there is not any serious work on this crucial aspect in the literature. Knowing this big hollow, and sick of waiting for somebody to do it, we have got down to work and have analyzed some parameters and their psychological consequences.

Sex was the first parameter studied here. A fact related to this was that females always went to bathroom in company, never alone. It seems like this kind of "bathroom-meetings" help females to bit the traumatic effects of public toilets that attack males. However, this factor is not the only one, not even the most important, because males that used female's toilets nearly always went alone and were not so affected. Probably these protector-meetings are associated to sex, being effective only in female and some non-defined-sex people. We actually think that reversion of male's alterations when they use female's bathrooms is due to the better cleanness of these. With respect to chamber pot use, trauma of males is due to something pendulous (8). A special mention is for non-defined-sex people. This group is very interesting and should be studied in more detail. We guess that their origin is not the Earth.

Other parameter studied was the age of people. A group of people that really liked use of public bathrooms was children from 4 to 12. Asked about that, they informed us that using public bathrooms they felt older. This is related

to the fact that they hated chamber pot, because this object is associated to very young children. Indeed, this is a very practical object for very young children (three years old or younger), because they usually have some enjoying forms, like Donald Duck or Mickey Mouse heads. Another group that really liked using chamber pot was constituted by people older than 50. The main reason was that they preferred to keep this object under their beds, eluding in this way to go to the bathroom, many times too far and cold. Additionally, they hated public bathrooms as they found them very uncomfortable (9). In the rest of groups non-significant differences were discovered, although some young people liked public bathrooms because they could write on their doors and/or walls some artistic, propagandistic and often challenger messages.

The relationship between hair color and public/own bathroom or chamber pot use was analyzed as well. Here surprisingly appeared a very strange group: people with green hair. We have studied them in more detail, and finally we have concluded that, because some unexplored reasons, they are rare specimens that really love defecating. People with red stained hair shown a very similar behavior. On the other hand, people with red natural hair did not shown any significant differences, just as brown and blond hair people.

The last parameter totally studied was the leg length of people. This parameter revealed opposed preferences with respect to bathroom or chamber pot use. Thus, people with legs longer than 60 cm did not like using chamber pot because it was very unpleasant, while people with shorter legs preferred chamber pot because when they used bath did not arrive at the floor and their legs were hanging. Moreover, when the last group had to use a bath they preferred own bathroom to public one, in order to avoid this shameful situation.

Finally, relationship between weigh and height of people and traumatic effects of defecation was not studied at all because investigators went on holiday. Holidays were absolutely necessary and prescribed by our medical staff, because important damages were appearing into investigator's brains and were becoming non-reversible and nearly lethal even after chemotherapy.

Obviously, although we have clarified the

relationship between some human physical parameters and psychological aspects, probably there are many others that are acting. Further analysis, actually in progress in our bathrooms, will help to clarify the relationship between the effects of other parameters, particularly non-human parameters (like season, room temperature, toilet material or who is the Major at that moment), as well as the putative synergic effects among these parameters.

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