

Alla Turca: Squatting for Health and Hygiene

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Abstract. This paper describes the traditional *alla turca* Turkish toilet, or squat toilet, as well as its more modern sitting version, and the hygiene etiquette in using the toilet, including the pros and cons of the squatting posture and the squat toilet. This is complemented with modern design solutions for these two types of toilets.

Keywords. Defecation, Constipation, Toilet, Height, Elderly, Pelvic Floor Muscle, Low Back Pain

1. Introduction

In most Muslim countries, squat toilets are the norm. These toilets, used by almost two thirds of the world population, may seem archaic and “undignified” to most Westerners, but they have been proven as being much healthier and more hygienic than the sitting ones [1]. There are several types of squat toilets (also known as Eastern, *alla turca*, Turkish, or Natural-Position toilet). These all consist essentially of a hole in the ground and places for the feet, with one exception, the “pedestal” squat toilet, which is as high as a standard sitting toilet. Old Turkish squat toilets, as well as the ones found in remote areas in the countryside, have a water tap and/or a container of water for washing the intimate parts with the left hand, and if available, toilet papers (see Figure 1).

During the Ottoman period, squat toilets were in private rooms generally located outside of homes for hygienic reasons. This changed with the development and improvement of drainage and sewage systems and these toilets took their place inside the home, in a section called *eyvan* [2]. Figure 2 shows the basic types of Turkish squat toilets from the Ottoman period.

In urban Turkish homes, many toilets have ‘evolved’ to the sitting types (also known as *alla franca*, Flush Toilets or Western Toilets) for most buildings. This was considered as modernisation and many families have opted to the sitting posture, finding it more comfortable and aesthetic, and more Western looking. The hygiene and health aspects of the squat toilet have slowly been ignored. Even after the introduction of toilet paper, water still remained as a cleansing agent, and has also been incorporated to sitting toilets (see Figure 7), in the form of a nozzle that comes out from underneath the toilet seat, from the back and squirts a jet of water. This is now a common feature in most households.

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One could possibly also squat over standard Western sitting toilets, after raising the toilet lid, but this requires extra care, as they are not specifically designed for this purpose. Some retrofitting apparatus and designs are available to facilitate this task. Please see Figures 10 and 11 for such examples.

2. Hygiene Etiquette in Using a Turkish Toilet

In relation to the grooming activities following the use of a toilet, Gallagher [3] separates the users in two categories “the wipers and the washers”. The Turkish culture belongs mainly to the washers’ category. Muslims, Japanese and continental Europeans are all ‘washers’, mostly using a bidet after passing motion. For the Muslims, this is also a religious requirement, while for the others; washing gives them a greater sense of hygiene. In the Muslim faith, this washing is concerned with cleanliness and purity of body and soul, and can be applied to both sitting and squatting toilet postures. This comes from the fact that the Islamic culture gives an important role to water in praying, to purify the body and the soul. “In the Islamic garden, the water is the mirror of the Heavens and the symbol of life [4]” says Ayşe Birsel, designer of *Zoê*, the Toto washlet (see Figure 7).



Figure 1. A typical Turkish squat toilet with a water tap on the right, a toilet paper roll holder and a wall mounted flush button.

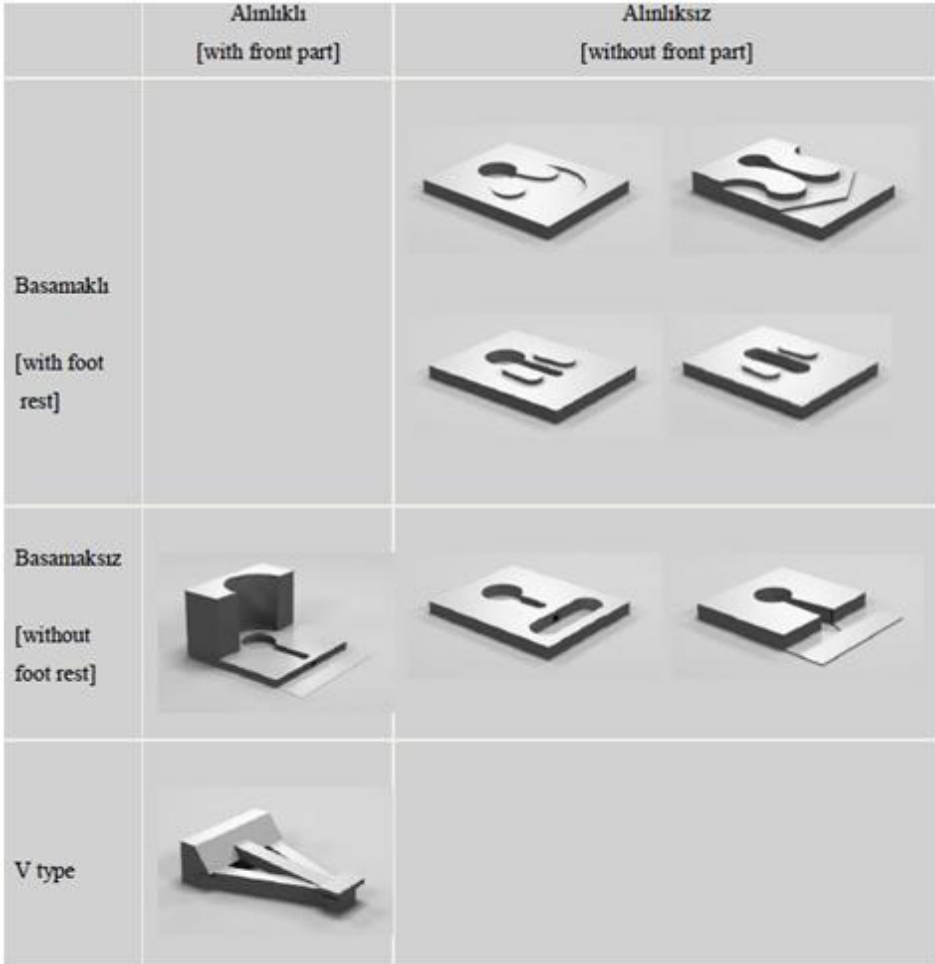


Figure 2. Ottoman squat toilets [2]

The Islamic faith has a long list of prescriptive rules regarding personal hygiene when it comes to the use of the toilet. This set of rules is known as *Qadaahul Haajah*. It is important to understand that these rules have been established well before the invention of toilet seats and toilet paper. Leaving the religious concerns aside, some of the rules for the hygienic etiquette of using a squat Turkish toilet are as follows [5]:

- One should squat keeping thighs wide apart applying the stress on the left foot.
- After relieving oneself it is essential to perform *Istinja* (washing with water) of the intimate parts with the left hand and water. This has been updated by religious leaders as: "At the beginning of *Istinja*, it is preferable to use toilet paper three times".
- After this process the hands should also be washed thoroughly.

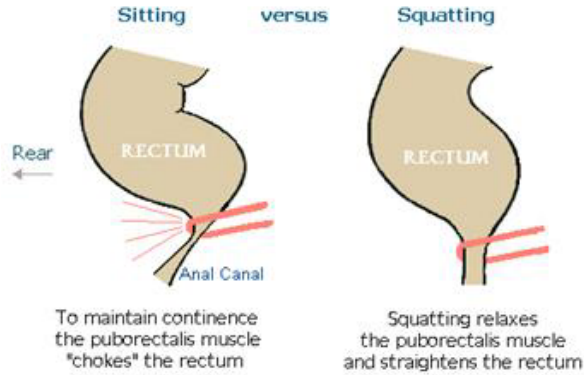


Figure 3. Puborectalis muscle in the sitting and squatting posture [15,16]

3. Advantages of the Squat Toilet

The use of a squat toilet is said to have many health advantages from a physiological point of view [6,7,8,9,10,11,12,13]. First of all, it is considered hygienic, as it does not involve any contact between the user and a potentially unsanitary surface. There is also no potential splashing as there is no water in the bowl. Ergonomically, the squatting posture provides a natural body posture and is healthier than the sitting one, as it provides for the alignment of the rectum and the anus in a near vertical position. This is facilitating the complete evacuation of bodily waste. Furthermore, elimination of waste in this posture protects the nerves controlling the prostate, bladder and uterus from being stretched and damaged.

Squatting also relaxes the puborectalis muscle and straightens the bend to allow waste to be evacuated easily (see Figure 3). It is also said that squatting helps in reducing the occurrence of diseases of the digestive system, such as constipation and hemorrhoids [14,15] and other colorectal disorders (such as colitis, diverticulosis and appendicitis). For pregnant women, the squatting posture is also said to be better as it does not apply pressure on the uterus, and daily squatting is reported to help prepare for a more natural delivery [12].

One other big advantage of squat toilets is that they are very easy to clean. They also consume less water per flush than western toilets and hence are more environmentally friendly.

4. Disadvantages of the Squat Toilet

From an ergonomic point of view, squat toilets are more difficult to use, requiring careful balancing skills. This is particularly important for people with knee joint problems, limited mobility or recovering from leg injuries. Elderly people may find it very hard to squat and rise back, if they are not used to it. For the large majority of the Muslim population, especially those practicing the religion with a regime of five

prayers a day (involving a lot of kneeling down and rising up), squatting would not be a problem.

Another big disadvantage is that squat toilets may often smell bad, as their traps design does not allow for a complete flush. The sitting toilet, due to its bowl design that traps most of the odor under water and to the fact that it is completely flushed after each use, does not retain any odor.

Yet another disadvantage related to hygiene pointed out by Genç [2] is that the footrest may get dirty and cause the transfer of microbes around. This may not be such a big problem for domestic toilets as most people in Eastern and Asian countries take their shoes off inside their home, and some also have special slippers for using the squat toilet. On the other hand, this is a problem in public restrooms [2].

Finally, squat toilets may also allow splatter to occur on one's own legs and feet, not to mention the potential to lose back pocket belongings into the hole.

5. Modern Toilet Designs

Modern versions of Turkish toilet designs have been created during the years and the following section will discuss examples of these.

5.1. Squat Toilets

Although it is difficult to find examples of modern squat toilets, there are few designers reinterpreting the squat toilet. Two re-designs of the traditional Turkish squat toilet can be seen in Figures 4 and 5, both designed by İnci Mutlu and Gamze Akay for Vitra. In *Sun* (Figure 5), the foot grid, usually in the shape of two “elephant feet” has been extended all around the recess and the hole.

The Water Room (Figure 6) was designed by Ayşe Birsel. This design is inspired by the beauty of water in nature, and incorporates a minimalist squat toilet which consists of a recess and a hole, with a bar to hold while rising up and a soft rock to lean

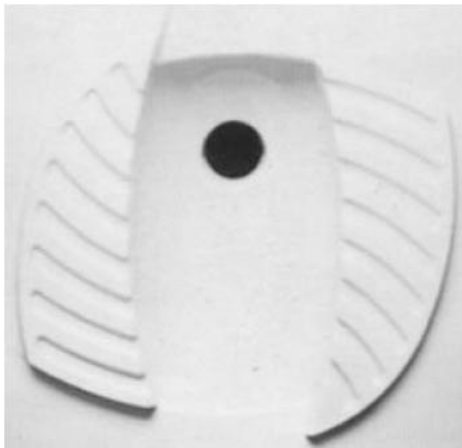


Figure 4. Squat Toilet by Gamze Turkoğlu Akay and İnci Mutlu for Eczacıbaşı Vitra [17]



Figure 5. *Sun* – Turkish squat toilet [18]



Figure 6. The Water Room incorporating a squat toilet

against (encircled on the left of the image). The water room was awarded first prize at the “Design the Future competition” in Japan, in 1989, and an “ID Magazine Award for Concepts” in 1990.

5.2. *Sitting Toilet with Imbedded Washing Pipe*

As mentioned earlier, most seated type Turkish toilets have a washing copper pipe incorporated. A modern version is *Zoê* (Figure 7) designed by Ayşe Birsel for the Japanese company Toto.



Figure 7. Zoê Washlet



Figure 8. Flo



Figure 9. Pinz Ideation 2-in-1 [19]

5.3. Hybrid Toilets, Squatting/Sitting Versions

Flo (Figure 8) was designed by a team of staff and graduate students at Arizona State University, with the aim to design a sustainable, transgenerational toilet that would be usable by toddlers as well as by their grandparents [13]. Figure 9 shows *Pinz*, incorporating dual use of sit and squat toilet [19]. The benefits of *Pinz* are cited as follows: 1) Non-splashing, as the water level is close to the body; 2) Water saving with a pressurized cistern located next to the siphon jet; 3) No blockage with a large trapway (8 cm internal diameter); 4) Safe, as unlike Turkish toilets, this one is above the floor level with a rim around, avoiding slipping into the pan; 5) Hoods on both ends to contain urine spray, like Japanese squat toilets; 6) Easy installation, simply bolted onto the floor, like a normal toilet; and finally, 7) Choice of wet or dry landing.

5.4. Retrofit Squatting Devices for Sitting Toilets

Figure 10 and 11 below show two different temporary retrofit squatting devices easy to install. The first one, *NaturesPlatform™*, provides a platform over an existing seated toilet, enabling the user to squat. This device is manufactured in the UK. The second one, *Lillipad* also allows for a semi-squat position for those with limited flexibility, by raising the feet onto the front step while sitting on the toilet and leaning forwards. A more permanent example, the *Toilet Transformer*, Westernises and converts old-style Japanese squat toilets into the 21st century (see Figure 12).



Figure 10. NaturesPlatform™, Nature's Platform toilet converter (<http://www.naturesplatform.com/>)



Figure 11. Lillipad: retrofit squatting device for seated toilets [20]

6. Conclusion

Squat toilets have been designed and used in India, the Far East, Asia and Anatolia since ancient times. The instinctive squatting posture may well have inspired the design of the first squat toilets [2]. This posture has advantages and disadvantages. The main advantages can be summarized as follows: considered hygienic, this posture provides a natural body posture that allows better relaxation during body waste evacuation, which prevents diseases in the small intestines. Furthermore, it is eco-friendly as it uses less water.

The disadvantages can be summarised as follows: this posture may not be comfortable for all, especially for the disabled and for elderly people with arthritis in the knee. Another disadvantage is that, in heavily used public restrooms, the footrests may hold dirt and bacteria that could be spread around by users [2].

Despite health and hygiene advantages, the Turkish squat toilet is getting less popular as days go by. The comfort of the sitting posture and the wide range of beautiful sitting toilet designs seem to shadow the advantages of the squat posture. The squat toilet is in desperate need of reinterpretation and innovation by talented designers to return into peoples' daily life. Finally, increased concerns about the environment and irresponsible use of natural resources may well bring squat toilets back as a healthy and sustainable alternative to flushed sitting toilets.



Figure 12. Toilet transformer [21]

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