



Fact-Finding Survey of Defecation Behavior in Young Japanese

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Study background:

Defecation is an act that is essential to maintaining biological activity and is a basic physiological need in humans. Spending one's daily life without discomfort or hindrance to defecation is also associated with quality of life. Several past surveys of defecation have focused on constipation and fecal incontinence, and many surveys have focused on the presence or absence and causes of constipation. However, the postures that individuals adopt when independently performing defecation behavior, and behaviors that have been devised to facilitate defecation remain unclear.

Method :

- 1. Survey subjects:** A total of 300 healthy university students at a nursing faculty.
- 2. Survey period:** December 2015
- 3. Survey method:** We created a proprietary self-administered questionnaire in which subjects could fill out information on their experience of constipation, posture during defecation, behavior during defecation and other facts. The questionnaires were distributed to subjects at once and recovered using a collection box in which subjects voluntarily submitted their questionnaires. To avoid coercion of subjects during distribution and recovery of the questionnaires, an investigator with no connection to the allocation process of students' academic credits was assigned to distribution and recovery.
- 4. Survey details:** Survey items included age, sex, pattern of defecation frequency, the Constipation Assessment Scale (CAS), use of constipation prophylaxis, use of laxatives, style of toilet, ease of defecation based on the style of toilet, time required for one defecation, fatigue after one defecation, defecation posture.
- 5. Analysis method:**
 - 1)** Percentages were tallied up for age, sex, use of constipation prophylaxis, use of laxatives, defecation style, and ease of defecation based on defecation style.
 - 2)** Subjects were divided into two groups based on the pattern of defecation frequency: a constipation group who "did not defecate for 3 days or more" and a normal group comprising all other subjects. Subjects were also divided into two groups based on the CAS: a constipation group who scored at least 5 points and a normal group who scored less than 5 points. The CAS incorporates a subjective sense of constipation, which was considered in line with the purpose of this survey. To evaluate fatigue after defecation, subjects were asked to indicate on a visual analog scale (VAS) how fatigued they felt. A VAS score of 0 denoted "Almost no change," a score of 50 denoted "Mild sense of muscle fatigue," and a score of 100 denoted "Either general muscle fatigue, malaise, shortness of breath or other sensation." Those who scored below 50 were allocated to a "low fatigue group" while those who scored over 50 were allocated to a "strong fatigue group." For defecation posture, subjects were divided into three groups: an "upright 90° posture group," "forward leaning group" and "belly-to-thighs group." For defecation time, subjects were divided into 5 groups: a "1-2 minutes group," "3-5 minute group," "6-9 minute group," "10-15 minute group" and "15 minutes or more group." These groups were used to test for statistical differences by using chi-square tests. A p value of less than 0.05 was considered to indicate a significant difference in statistical processing (SPSS Ver. 23).

Results :

Of the 300 questionnaires that were distributed, 258 were recovered (recovery rate: 86%).
30 men 12% and 227 women 88% The mean age = 20.5 ± 1.42 years.

Significant statistical differences were seen between CAS score and coping methods during constipation ($p < 0.01$), CAS score and use of medication ($p < 0.01$), CAS score and defecation time ($p < 0.05$), CAS score and defecation posture ($p < 0.01$), fatigue and defecation time ($p < 0.01$), and defecation posture and fatigue ($p < 0.05$).

The defecation frequency	daily	51%
	every 2 days	24%
	every 3 days	19%
	every 3 days or more	6%
CAS scores	5 points or below	75%
	6 points or more	25%
Constipation prophylaxis	used	47%
	not used	53%
Coping methods*	used during constipation	51%
	not used	49%
Laxatives	used	10%
	not used	90%
The style of toilet	a Japanese-style toilet	1%
	a Western-style toilet	99%
In response to "ease of defecation based on the style of toilet"	a Japanese-style toilet	14%
	a Western-style toilet	86%
Defecation time	1-2 minutes	31%
	3-5 minutes	40%
	6-9 minutes	15%
	10-15 minutes	11%
	15 minutes or more	3%
The fatigue score was	50 or below	86%
	over 50	14%
The defecation posture adopted	90°	19%
	forward leaning	76%
	belly-to-thighs	5%

Conclusion :

CAS scores of at least 5 points in 25% of subjects revealed that a quarter of the students surveyed felt that they were constipated. We also found that many students employed some kind of coping method when they felt constipated. Some subjects relieved constipation by taking oral laxatives, which were used by 10% of all subjects. Those with higher CAS scores tended to be more likely to use laxatives. While laxatives were used as a coping method by 10% of subjects, the remaining 90% used other methods. This revealed that the majority of subjects coped with constipation by means other than medication. The fact that the subjects of this survey were young adult students studying nursing who had knowledge of medications and strong awareness of health may have influenced the results.

As for defecation postures, the majority of subjects adopted a forward leaning posture, which is consistent with a posture considered to morphologically facilitate defecation. This fact-finding survey investigated the postures that people naturally adopt to facilitate defecation and revealed that people adopt a logical posture.

In this survey of healthy adults, 86% of subjects experienced "mild fatigue from defecation," indicating that many subjects felt fatigued after defecating. However, results may differ in elderly people with diminished muscle strength required for defecation and in patients undergoing treatment for heart disease or cerebrovascular disease that restrict actions such as straining during defecation. We intend to continue investigating defecation behavior in such subjects.