

Toilet dreams: Incorporation of waking-life memories?

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Summary. Toilet dreams are quite common but have been very rarely studied systematically. Many authors assume that the urge to urinate is the basic trigger for these dreams. Analyzing the frequency and characteristics of toilet dreams in a long dream series supports the idea that these dream topics are related to waking-life memories – especially waking-life thoughts. It would be very interesting to study whether intraindividual night-to-night fluctuations regarding the urge to urinate and/or interindividual differences are related to the frequency of toilet dreams.

Keywords: Toilet dreams; Continuity hypothesis; Internal stimuli

1. Introduction

Toilet dreams have been reported as a common dream theme for centuries (Freud, 1991; Scherner, 1861; Schönhammer, 2004; Weygandt, 1893) and Nielsen and Zadra (1997; 1999) included the item “Have you ever dreamed of being unable to find, or embarrassed about using, a toilet” in their Typical Dream Questionnaire. In several student samples from different countries, the percentages of participants that answered affirmatively were as follows: 19.2% (N = 1348, Canada; Nielsen, et al., 2003), 30.0% (N = 444, Germany; Schredl, Ciric, Götz, & Wittmann, 2004), and 59.2% (N = 378; China; Yu, 2008). No gender differences were reported by Schredl et al. (2004) and Yu (Yu, 2008), whereas in Canada women reported this typical dream theme more often than men (Nielsen, et al., 2003). Analyzing a series of 600 diary dreams recorded by a female dreamer over a period of 51 years, Smith and Hall (1964) found that 9% of the dreams included the toilet theme. Being classified as a typical dream theme has the disadvantage that one assumes that the content of toilet dreams does not vary much but, despite the relative large numbers of persons reporting toilet dreams, no content analytic study has yet been carried out to study the frequency and characteristics of toilet dreams.

At the end of the 19th century, the view that external and internal stimuli actually cause such dreams were very popular (Schredl, 2010), whereas Freud (1991) took a different view on the matter. He recounted a dream he had while travelling on the night train which ended with a scene where Freud saw another man urinating (pp. 301-302). He woke up from that dream with a strong urge to urinate. As this was very uncommon for Freud – to wake up in the middle of the night in order to use a toilet and the associations to dream were related to two childhood episodes related to urinating – he speculated that “the desire to micturate was only called

up by the dream thoughts. (p. 311)” Interestingly, Pressman and coworkers (1996) reported that the subjective experience of waking up due to the urge to urinate is most often incorrect, i.e., the person woke up for another reason (sleep apnea episode, periodic limb movements) and then thought s/he had to use the toilet. In elderly persons, using the bathroom during the night at least once is common – and associated with poor sleep (Bliwise, et al., 2009) –but it seems very implausible that all these awakenings are accompanied by toilet dreams.

Modern sleep research has tried to shed light on the effect of internal stimuli on dream content using experimental manipulation and sleep EEG recordings; see, for example, the study of Bokert (1967). Thirst-related dreams were more often reported by participants who were deprived of food and fluids the day before and received a salty meal prior to sleep. However, the interpretation of the data is difficult because the deprived persons are likely to not only experience thirst during the sleep but presumably thought a lot about thirst and drinking during the previous day and that might be the reason for the thirst-related dreams. I.e., this paradigm to experimentally induce an internal stimulus does not answer the question whether the dream is incorporating an actual bodily stimulus present in REM sleep prior to the awakening, memories of thirst experiences, or thoughts about drinking that occurred prior to sleep. Since research has shown an effect of external stimuli on dream content and also that dreams incorporate waking-life experiences (Schredl, 2008; Strauch & Meier, 2004), both explanations might be valid.

Another line of research has investigated person with enuresis. An interview study in 84 patients showed that most of them reported toilet dreams (Weissenberg, 1925). Sleep laboratory studies, however, did not find toilet dreams associated with enuresis episodes (Pierce, 1963; Pierce, Whitman, Maas, & Gay, 1961; Schiff, 1965). Gastaut and Broughton (1964) found that toilet dreams occurred hours after the actual enuresis episode, a finding that was interpreted as the external stimulus of the wet bed being incorporated into the dream but not the urinating which occurred earlier in sleep.

To summarize, the relationship between the urge to urinate, urinating and dream content is less than clear. The

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research question of the present study was whether content and characteristics of toilet dreams might shed light on the origin of these dreams.

2. Methods

The participant has kept an unstructured dream diary since September, 1984. Dreams recorded up to the end of September 2002 were included in this study (N = 6991; see Table 1). Mean word count of these dreams was 127.8 ± 83.1.

The male participant was 22 years old at the beginning of the studied dream series. The dream reports were typed and entered into a database (Alchera 3.72, created by Harry Bosma, www.mythwell.com). This database has the feature of assigning key words to the dreams, a task carried out by the dreamer himself. First, whether the dreamer or a dream character is looking for a toilet or using a toilet was rated. Dreams that included the toilet as a setting but without any activities of the dreamer or another dream character were not coded. The selected toilet dreams were scored along the following scales: Setting (e.g., pub/restaurant, at home; for full details see Table 2), position (sitting vs. standing), very unusual and bizarre alterations related to the toilet, filthy or dirty toilets, urinating or defecating in the dream, dream scene shifts to another scene without relief, dream ends without relief, and seeing others who look for a toilet or actually urinate/defecate in the dream.

The Alchera software also provides a word count for each dream report. As an analysis unit a single dream report was used. The data were entered into an Excel sheet (Microsoft) and data analysis was carried out with the SAS 9.2 software package for Windows. For testing differences in frequency of toilet dream per year, a χ^2 test was used.

3. Results

Overall, 175 dreams (2.52%) included references to toilet activities. Mean word count of the toilet dreams was 179.8 ± 97.7 words. The frequency of toilet dreams over the years is depicted in Figure 1. The small fluctuations did not reach statistical significance ($\chi^2 = 12.1$, $df = 18$, $p = .8420$).

The settings of the toilet dreams are shown in Table 2. Most often, houses/apartments of others or unknown houses/apartments, pubs/restaurants, and hotels were the setting in which the toilet within the dream was located. Less

Table 1. Dream series (N = 6991).

Year	Dreams	Mean word count
1984	20	183.1 ± 94.5
1985	177	156.3 ± 98.2
1986	220	138.5 ± 82.2
1987	308	123.6 ± 88.6
1988	501	121.6 ± 84.4
1989	533	138.1 ± 84.8
1990	531	124.8 ± 77.8
1991	582	115.1 ± 70.1
1992	879	133.9 ± 84.0
1993	836	123.9 ± 75.2
1994	544	107.1 ± 69.4
1995	457	110.3 ± 69.7
1996	484	138.5 ± 99.6
1997	201	136.5 ± 94.4
1998	119	134.6 ± 78.6
1999	230	140.0 ± 99.3
2000	79	164.5 ± 92.4
2001	158	137.8 ± 85.7
2002	132	139.1 ± 80.9

than 10% of the toilet dreams took place at the dreamer's home. The remaining settings were public buildings like hospitals, churches, public toilets, schools, theaters, nature, university, train or bus, at work and gymnasiums. Five dreams included inappropriate indoor settings like defecating in an office room, urinating into a waste paper basket, urinating onto the floor in the cellar, urinating into a tin can, and urinating into the kitchen sink.

In 75 of the toilet dreams, an explicit statement of the dreamer's position was made (sitting: N = 41; standing: N = 34). Unusual or bizarre alterations regarding the toilet were described in 55 dreams, e.g., toilets only separated with

Figure 1. Percentage of toilet dreams (N = 6991 dreams).



Table 2. Settings of toilet dreams (N = 176).

Variable	Frequency	Percentage
House/Apartment of others or unknown	31	17.61%
Pub/restaurant	24	13.64%
Hotel	22	12.50%
At home	16	9.09%
Public building	15	8.52%
Public toilet	12	6.82%
School	11	6.25%
Theater/cinema	11	6.25%
Nature	10	5.68%
University	7	3.98%
Train/Bus	6	3.41%
Location without toilet	5	2.84%
At work	3	1.70%
Gymnasium	3	1.70%

curtains from a hallway or complex water basins instead of normal toilets. For a minority of dreams, the toilets were described as dirty or filthy (N = 17 dreams). The privacy of the dreamer was disturbed in 63 toilet dreams (40.4% of the dreams with toilet activities of the dreamer himself), e.g., a boy banging on the dreamers back, persons looking at the dreamer, persons or even animals entering the toilet. Other persons in search for a toilet were present in 18 dreams, whereas the dreamer sees other dream characters urinating or defecating in 16 dreams. Overall, 156 dreams included toilet activities of the dreamer himself: in 44.87% he urinated (N = 46 dreams) or defecated (N = 15 dreams; in 9 dreams it was not explicitly mentioned whether he was urinating or defecating), in 33.33% of the dreams, the dream shifted to another scene without any reference to toilets or urge to urinate, and 21.79% of the toilet dreams ended by waking up before the dreamer relieved himself in the dream. None of these dreams were followed by bed wetting.

4. Discussion

The findings of this dream series indicated that toilet dreams show a great variability in content whereas their frequency was quite stable over time.

The frequency of 2.53% toilet dreams in this dream series is much lower than the percentage reported by Smith and Hall (1964); as both are single case studies, large-scaled surveys are necessary for estimating the percentage of toilet dreams. Unfortunately, the original studies with the typical dream questionnaire (Nielsen, et al., 2003; Schredl, et al., 2004) did not provide any figures about the current frequency of toilet dreams nor the life period in which they occurred. Comparative studies of young and elderly persons would be interesting to determine whether the frequency of toilet dreams increases with age because the frequency of using the toilet during the night does (Bliwise, et al., 2009).

The results regarding the settings indicate that the dreamer is almost always using a toilet in the dream in unfamiliar

and often public setting but quite rarely the toilet at home. One might speculate that the frequent occurrence of other settings (hotel, bar/restaurant, etc.) in toilet dreams render it plausible that these dreams reflect waking life because typically one thinks more often about these issues (e.g., Where I can find a toilet?) in unfamiliar settings whereas in the home setting using the toilet is not a big issue. Interestingly, for erotic dreams it has been shown that the amount of sexual fantasies and not the amount of sexual activities was related to the frequency of nocturnal erotic dreams (Schredl, Desch, Röming, & Spachmann, 2009); a finding supporting the idea that toilet dreams might reflect waking-life cognitive activity related to these issues. On the other hand, a considerable amount of toilet dreams included toilets that are constructed in unusual or even bizarre ways, clearly indicating that toilet dreams are not mere replays of waking-life experiences.

Unfortunately for this study, the dreamer did not record whether he needed to use the toilet after waking up from toilet dreams or other dreams. This may not have explained the reason for the awakening – see Pressman, et al. (1996), but a correlation between the internal stimulus and dream content could have been established with this measure. Measuring the subjective strength of the urge to urinate upon awakening and possibly even the amount and concentration of urine would allow the comparison to be made as to whether the urge to urinate is stronger after toilet dreams as compared to dreams featuring other topics. If so, this would yield evidence for the incorporation of the internal stimuli. The hypothesis of Freud (1991) that the urge to urinate is an effect of the dream might be tested by the amount of urine because if the effect is explained solely psychologically the amounts of urine should not vary over different dream topics. One might experimentally manipulate the urge to urinate by increasing the fluid intakes of the persons and study whether toilet topics come up more often in the dreams of the following night. However, this design underlies the same problems as the Bokert (1967) study, as the participants probably think about these issues due to their unusual consumption of beverages during the day or in the evening. More elegant would be a double-blind placebo-controlled study with a diuretic substance that increases the urge to urinate and measure the effect on dream content.

Another argument against explaining toilet dreams by simple incorporation of the urge to urinate is the fact that only about 20% of the dreams ended with the unfulfilled need whereas more often the dream plot changed to other topics, i.e., the urge to urinate did not precede the awakening. On the other hand, one might argue that the urge to urinate might be present the whole night or at least in the second part of the night, but this line of thinking does not explain why only about 2.5% of the dreams include this topic while the majority does not.

Regarding other characteristics of toilet dreams in this series like position (sitting vs. standing) or disturbed privacy, it would be very interesting to analyze the toilet dreams of women. The high number of disturbances might be due to the fact that men often use urinals in bars/restaurants with several of them in the same room with less privacy.

Experiencing relief within the toilet dream was not related to any bed wetting in this dreamer and, thus, did not support the idea that enuretic episodes were preceded by toilet dreams – as have been reported previously in patients with enuresis (Gastaut & Broughton, 1964). Given Freud's theory

that the dream is the guardian of sleep (Freud, 1991), one might speculate whether these 'successful' toilet dreams accomplish this task, i.e., satisfying the urge to urinate subjectively so the person can continue to sleep. However, in the present data set the toilet dreams with additional scenes before waking up are in this respect comparable. Again, a subjective as well as objective measure of the urge to urinate would be necessary to shed light as to whether the guardian hypothesis of dreams might apply to toilet dreams. As this is a single case study and the author had been told by a fellow dreamer that this person woke up from a dream in which he was peeing and actually wet the bed, larger samples have to be investigated.

To summarize, the analysis of toilet dreams supports the idea that these dream topics are related to waking-life memories – especially waking-life thoughts, even though they are not exact replays of memories. It would be very interesting to study whether interindividual differences are related to the frequency of toilet dreams. Based on her clinical experience, Faraday (Faraday, 1985), for example, suggested that toilet dreams, especially those where the dreamer is searching for a toilet and does not find a usable one, might reflect waking-life episodes where emotions were withheld.

The following dream of the participant might stimulate speculations about the origin of toilet dreams and their relationship to waking-life issues.

"While I am about to leave the apartment (old building) I notice that an obsessive-compulsive patient is interviewed. He experiences regular nightmares with toilet topics. He is watching boys urinating, unpleasant feeling. I ask him if I can question him about that. He agrees. I ask him whether he experiences similar fears in waking life. He hesitates; it becomes clear to me that his toilet behavior during the day is quite normal, but his attitude towards these topics is stiff. I whisper this into the ear of his therapist."

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