Does the lower lucid dream frequency in Japan compared to Germany reflect cultural differences?

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Summary. Lucid dreams are characterized by the knowledge that one is dreaming while dreaming, and skilled lucid dreamers can actively choose what to do, e.g., having fun or conquering fears. Several previous studies indicated that lucid dream frequency is lower in Japan, a country traditionally valuing social aspect like harmonious interdependence, compared to Western countries in which individuality is an important value. The present study compared two population-based samples (N = 282 Japanese-speaking participants and N = 2,929 German participants) regarding their lucid dream frequency. The findings confirmed previous results and, thus, implicate that frequency in lucid dreaming might reflect cultural differences. It would be very interesting to study whether lucid dreaming that included the possibility to control the dream action is directly related to the cultural background of the dreamer.

Keywords: Lucid dreaming, culture, Japan, Germany

1. Introduction

Dreams in which the dreamer is aware that s/he is dreaming while still being within the dream are defined as lucid dreams (LaBerge, 1985). Typically, lucid dreams were applied for having fun, coping with nightmares, for creativity, and practicing sport skills (Bonamino et al., 2024; Schädlich & Erlacher, 2012). Content analytic studies (e.g., Schredl, 2024; Schredl et al., 2022) indicated that lucid dreams include more positive emotion, less problems and more fun activities like flying and erotic activities. Interestingly, the number of persons and/or the occurrence of verbal interactions are lower in lucid dreams compared to non-lucid dreams (Schredl, 2024; Schredl et al., 2022) – a finding which can be interpreted that lucid dreamers are less focused on social topics but more on individual self-gratification. The large meta-analytic study of Saunders et al. (2016) indicated that about 55% of the participants had experienced at least one lucid dream during their lifetime; however, most of the studies were carried out Western cultures like the United States of America, the United Kingdom, and Germany. One might expect that in cultures that are less focused on individuality but more on values of attending to others, fitting in, and harmonious interdependence with others like Asian cultures (Markus & Kitayama, 1991) might be less frequent compared to Western cultures. Indeed, three studies (Erlacher et al., 2022; Erlacher et al., 2008; Tsuruta, 2015) showed that lucid dream frequency in Japanese student or athletes was significantly lower compared to similar groups in Germany or the United States of America. In non-lucid dreams of Japanese psychotherapy patients social dream content, e.g., dream ego sees others or other dream characters show positive behavior towards the dream ego, was more frequent compared to psychotherapy patients in Germany (Konakawa, 2020; Roesler et al., 2021). Overall, the lower frequency of lucid dreams in Japan compared to Western countries might reflect differences regarding individuality vs. social orientation in these cultures.

The aim of the present study was to study population-based samples to expand the previous studies (Erlacher et al., 2022; Erlacher et al., 2008; Tsuruta, 2015) that focused on students and young athletes. Based on the social values in the Japanese culture (Markus & Kitayama, 1991) and the concept of lucid dreaming, doing what you want if you gain control (Schredl et al., 2022), we expected a lower lucid dream frequency in the Japanese sample compared to the German sample.

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Submitted for publication: October 2025
Accepted for publication: October 2025
Online first: October 20, 2025

2. Method

2.1. Participants and Procedure

A total of 282 Japanese-speaking adults participated in the study, ranging in age from 21 to 76 years with a mean age of 42.52 ± 10.38 years. The sample included 123 women (43.62%) and 159 men (56.38%). Participants were recruited through a Japanese crowdsourcing platform. The initial survey was conducted in December 2024, and those who completed the questionnaire received a reward of 200 yen. For more information see: Yoshioka (2025).

The German sample consisted of 2929 persons (1742 women, 1187 men) who completed the online survey between April 18, 2014 and April 29, 2014 (Schredl et al., 2014b). The mean age of the sample was 45.88 ± 14.38 years (range: 16 to 92 years). The link for the study was posted on the online panel www.wisopanel.net. Within this

panel persons with an interest in online studies and with heterogenic demographic backgrounds are registered. For some surveys, prizes or money are offered for study participation, but this study was completely voluntary and unpaid.

The English version of the MADRE was translated by a professional translator and reviewed by a second expert. The retranslation was performed by a third person and compared to the original version. In a discussion, it was ensured that the items are easily understandable, which was demonstrated in a small pilot study (Yoshioka, 2025).

Statistical procedures were carried out with the SAS 9.4 software package for Windows. The lucid dream frequency scale is ordinal, therefore, ordinal regressions and Spearman Rank correlations were computed. For the main analysis (lucid dream frequency; Analysis 1), the proportional-odds ratio assumption was tested. The significance level was above p = .05. However, the analyses involving dream recall frequency did not fulfil this criteria; given the nature of the scale (clearly defined ordinal levels), we did not use multi-nominal regression techniques. Effect sizes for different predictors of the ordinal regressions were computed based on chi-square values and total N according to formula given in Cohen (1988) using the website of Lenhard and Lenhard (2016). The confidence intervals for the effect sizes were computed based on the formula presented in (Nakagawa & Cuthill, 2007).

2.2. Research Instruments

Two items of the Mannheim Dream Questionnaire (MADRE) were included in the present analysis (Schredl et al., 2014a). Dream recall frequency was measured with a seven-point scale (coded as 0 = never, 1 = less than once a month, 2 = about once a month, 3 = about 2 to 3 times a month, 4 = about once a week, 5 = several times a week, 6 = almost every morning). The retest reliability of this scale is high r = 0.85 (mean interval about 8 weeks) (Schredl, 2004).

Lucid dream frequency was elicited with an eight-point rating scale ("How often do you experience so-called lucid dreams (see definition below)?" 0 = never, 1 = less than once a year, 2 = about once a year, 3 = about two to four times a year, 4 = about once a month, 5 = two to three times a month, 6 = about once a week, 7 = several times a week). The following definition was presented: "In a lucid dream, one is aware that one is dreaming during the dream. Thus it is possible to wake up deliberately, or to influence the action of the dream actively, or to observe the course of the dream passively." The retest reliability of the lucid dream frequency scale was r = .717 for two weeks (Schredl et al., 2014b), in a sample of students for a four-week period r = .89 (Stumbrys et al., 2013).

3. Results

The distributions of the dream recall frequency scale for the Japanese sample and the German sample are depicted in Table 1. The group difference was not significant (standardized estimate: .0173, χ^2 = 1.0, p = .3181, effect size = 0.035 [-0.034; 0.104]) with age (standardized estimate: -.1078, χ^2 = 37.3, p < .0001, effect size = 0.217 [-0.286; -0.148]) and gender (standardized estimate: .0892, χ^2 = 25.5, p < .0001, effect size = 0.179 [0.110; 0.248]) as covariates in the ordinal regression analysis.

The lucid dream frequency data are presented in Table 2. The percentage of lucid dreamers having lucid dreams once a month or more often was slightly lower in the Japanese sample (22.59%) compared to the German sample (25.20%), whereas the percentage of participants not having had a lucid dream was higher in the Japanese sample (about 50%) than in the German sample (about 40%). Dream recall correlated significantly with lucid dream frequency in both samples: r = .329 (p < .0001; Japan) and r = .379 (p < .0001; Germany).

Controlling for age and gender, the group difference was statistically significant, that is, Japanese participants reported a lower lucid dream frequency compared to the German participants (see Table 3; Analysis 1). Adding dream recall frequency as a third covariate slightly increased the difference between Japan and Germany regarding lucid dream frequency (see Table 3; Analysis 2).

4. Discussion

The findings indicate – as expected – a lower frequency of lucid dreaming in the Japanese sample compared to the German sample – supporting the hypothesis that lucid dreaming frequency might be affected by the cultural values of a particular country.

One limitation of the study is that both samples, the German and the Japanese sample, are not representative for their respective countries. For the German sample, it was shown that there was a shift towards persons with high dream recall compared to a representative sample (Schredl et al., 2014b), similar data for Japan are not available. The non-significant difference in dream recall frequency between the two samples, however, indicate that the Japa-

Table 1. Dream recall frequency in the Japanese and German samples.

	Japanese sample (N = 282)		German sample (N = 2,929)	
Category	Frequency	Percentage	Frequency	Percentage
Almost every morning	17	6.03%	313	10.69%
Several times a week	98	34.75%	845	28.85%
About once a week	57	20.21%	563	19.22%
About two to three times per month	52	18.44%	422	14.41%
About once a month	26	9.22%	233	7.61%
Less than once a month	28	9.93%	379	12.94%
Never	4	1.42%	184	6.28%

Table 2. Lucid dreaming frequency.

	Japanese sample (N = 282)		German sample (N = 2,929)	
Category	Frequency	Percentage	Frequency	Percentage
Several times a week	7	2.48%	95	3.24%
About once a week	6	2.13%	106	3.62%
two or three times a month	11	3.90%	231	7.89%
About once a month	22	7.80%	306	10.45%
About two or four times a year	31	10.99%	452	15.43%
About once a year	23	8.16%	248	8.47%
Less than once a year	35	12.41%	363	12.39%
Never	147	52.13%	1128	38.51%

nese sample, also includes a higher percentage of persons with moderate to high dream recall compared to the general population as these individuals were willing to participate in a dream study. However, this shift towards higher dream recall was present in both samples and, thus, did not affect the difference regarding lucid dream frequency. This point is of importance as lucid dream frequency was correlated with dream recall frequency in both samples. It should also be pointed out that the persons were invited to participate in a study about dreams in general and not as a study on lucid dreaming. In the latter, one might expect a specific shift in lucid dream frequency, that is, persons with lucid dreams are more likely to participate (see for example: Stumbrys et al., 2014), but this was not the case in this study. Although both variables, dream recall frequency and lucid dream frequency are ordinal scales, the proportional-odds ratio assumption was fully satisfied only for the lucid dreaming frequency analysis – which was the basis for the main finding presented in this paper. As the results of the analyses are comparable, one might assume that the slight violation of the proportional-odds ratio assumption does not have a strong effect.

Even though the hypothesis that lucid dream frequency is lower in Japan compared to a Western country like Germany was supported – in line with previous research (Erlacher et al., 2022; Erlacher et al., 2008; Tsuruta, 2015) –, the question is whether this difference is specific, that is, whether other aspects of sleep, dreaming and dream content also differ between the two countries. Dream recall frequency distributions were similar in the present study, also no differences were found in the large-scaled study of Erlacher et al. (2022) in 2,163 German and Japanese athletes. In this sample, the percentage of sport dreams were also comparable, with about 25% to 30% of all remembered dreams included sport-related topics (Erlacher et al., 2020). This render alternative explanation of the difference between the countries due to different response styles in the context of dream topic very unlikely.

Whereas one study (Yamanaka et al., 1982) found a very low percentage of male characters in relation to the total number of male and female characters (29%), subsequent studies (Domhoff et al., 2004; Tartz & Krippner, 2017) indicate that the male percentages are comparable to those reported by American students, about 50% for female students and above 67% for male students, an “ubiquitous” gender difference found in many countries (Hall, 1984; Hall & Domhoff, 1963). Regarding typical dream themes, differences between a Japanese sample and an US American sample have been reported, e.g., US Americans dreamed more often about being nude or arriving to late whereas Japanese citizens dreamed more often about being attacked or flying (Griffith et al., 1958). Overall, the rank order of the typical dream themes and gender differences were relatively similar, e.g., males reported sexual themes more often than women (Griffith et al., 1958; Konakawa, 2025). As already mentioned, there are some findings indicating

Table 3. Ordinal regression analyses for lucid dream frequency (N = 3,211).

Item	SE	χ^2	p	Effect size [CI]
Analysis 1				
Age	-.1112	38.1	<.0001	-0.219 [-0.288; -0.150]
Gender (1 = f, 0 = m)	.0352	3.8	.0502	0.069 [-0.000; 0.138]
Group (1 = Japan, 2 = Germany)	-.0918	25.0	<.0001	-0.177 [-0.246; -0.107]
Analysis 2				
Age	-.0748	16.6	<.0001	-0.144 [-0.213; -0.075]
Gender (1 = f, 0 = m)	-.0012	0.0	.9541	-0.002 [-0.071; 0.067]
Group (1 = Japan, 2 = Germany)	-.1113	35.5	<.0001	-0.212 [-0.281; -0.143]
Dream recall frequency	.4048	419.6	<.0001[1]	0.775 [0.703; 0.847]

SE = Standardized estimates, CI = Confidence interval (95%, low; high), [1]one-tailed

more frequent social contents in Japanese dreams, e.g., more groups (Tsuruta, 2015) or more helpful interactions between other dream characters and the dream ego (Konakawa, 2020; Roesler et al., 2021). In addition, Japanese participants showed weaker agency in their dreams compared to an American sample, whereas other dream characters played more often a main role in Japanese dream, possibly reflecting a more interdependent self-construal in waking life (Konakawa et al., 2023). This research findings would indicate the finding of less frequent lucid dreams in Japan compared to Germany might reflect cultural differences, that is a focus on harmonious interdependence with others vs. individuality (Markus & Kitayama, 1991). In order to test this hypothesis, it would be interesting to correlate an attitude measure regarding these values with lucid dream frequency. One would assume that in modern Japan that there is a large variability between traditional Japanese values and Western values.

One might speculate whether other variables might explain the difference in lucid dream frequency between Japan and Germany. Sleep duration seems to be shorter in Asian countries compared to countries is Europe (Willoughby et al., 2023); however, research, e.g., (Tschunichin & Schredl, 2024), is showing that sleep duration is mainly related to dream recall frequency (the chance to recall a dream is lower after shorter sleep periods) and, therefore, the difference in lucid dream frequency between Japan and Germany should not be effected in a marked way – as the second regression analysis controlled for this variable. A more specific variable that is related to lucid dream frequency might be the knowledge about lucid dreaming: A recent study (Schredl & Müller, 2025) showed that one third of participants never heard of lucid dreaming. Thus, it would be very interesting to study whether the knowledge about lucid dreaming – possible affected by media – differs between the two countries.

To conclude, the findings of the present study implicate that frequency in lucid dreaming might reflect cultural differences. Although the effect size of the difference in lucid dream frequency between Japanese samples and German samples are small (d = 0.21; see also: Erlacher et al., 2022), it would be very interesting to study how lucid dreaming that included the possibility to control the dream action is related to the cultural background of the dreamer. One might speculate that the cultural background, e.g., the agency concept might affect the frequency of lucid dreams with awareness only differently compared to lucid dream in which the dreamer has control.

Funding

This work was supported by JST SPRING, Grant Number JPMJSP2110.

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