Dream sharing frequency: Stability over a three-year period

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Summary. Cross-sectional surveys have indicated that dream sharing frequency declines with age. However, longitudinal studies are lacking in order to differentiate between possible cohort effects and changes with age. The present analysis included 867 persons (487 women, 380 men) with a mean age of 49.79 ± 13.62 years who completed two surveys in 2014 and 2017 that included scales measuring dream sharing frequency. The findings indicate that the frequency of sharing dreams did not change over a three-year period and that inter-individual differences are quite stable. This would be in line with the life-style hypothesis of Schonbar (1965) and, thus, the previously reported decline of dream sharing frequency in cross-sectional designs very likely reflect cohort effects. It would be very interesting to study whether life events like undergoing psychotherapy or having life-changing dreams affect this stable "dream-related trait". Moreover, it would be valuable to know how this "dream-related trait" forms during childhood/adolescence.

Keywords: Dream sharing; Stability, Life-style hypothesis

1. Introduction

Dreams are very private because they are recollections of experiences that occurred during sleep (Schredl, 2018), but are nevertheless shared quite often (Curci & Rime, 2008; Olsen, Schredl, & Carlsson, 2013; Schredl, Berres, Klingauf, Schellhaas, & Göritz, 2014; Schredl & Bulkeley, 2019; Schredl & Schawinski, 2010). For example, 27.5% of a representative sample (N = 2015) stated that they share their dreams frequently (Schredl, 2009b). Several large-scaled surveys indicate that dream sharing frequency declines with age with effect sizes ranging from d = 0.254 to 0.443 (Olsen et al., 2013; Schredl et al., 2014; Schredl & Bulkeley, 2019). As representative German surveys (Schredl, 2008, 2009a) indicate that dream recall also declines with age, it is important to note that the dream sharing age effects were controlled statistically for dream recall frequency (regression analyses). The question is whether these age effects found in cross-sectional studies represent an actual decline of dream sharing frequency with age or might it be explained by cohort effects, i.e., do different generations share dreams differently. For dream recall frequency, a small decline (effect size = 0.161) over a three-year period has been documented in a longitudinal study over a three-year period (Schredl & Göritz, 2015). Another longitudinal study over a five-year period showed a slightly smaller effect size (d = 0.125), only marginally significant (Schredl, Braband, Gödde, Kreicker, & Göritz, 2019). As the effect sizes for the cross-sectional effect are higher (range: d = 0.186 to d = 0.275), the assumption would be that there are within-person declines as well as cohort effects at work.

The aim of this study was to examine the stability of dream sharing frequency over a two-year period in order to determine whether the cross-sectional decline with age represents cohort effects or genuine decreases with age.

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2. Method

2.1. Research Instruments

For eliciting the frequency of sharing dreams, an eight-point rating scale was presented ("How often to you tell your dreams to others?" 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 retest reliability of this scale for a two-week interval was *r* = .800 (Schredl et al., 2014).

For measuring dream recall frequency, a 7-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) was presented. The retest reliability of this scale for an average interval of 8 weeks is high: *r* = .85 (Schredl, 2004). In the 2017 survey, an eight-point rating scale was presented ("How often have you recalled your dreams recently (in the past several months)?" 0 = never, 1 = less than once a year, 2 = about once a year, 3 = about 2 to 4 times a year, 4 = about once a month, 5 = about 2 to 3 times a month, 6 = about once a week, and 7 = several times a week), i.e., somewhat different from the 2014 study.

2.2. Procedure and Participants

Overall, 867 persons (487 women, 380 men) completed both online surveys carried out within the same panel (www.wisopanel.net). Within this panel, persons with an in-

terest in online studies and with heterogenic demographic backgrounds are registered. Participants received a link for the particular survey; the participation was voluntary and unpaid. The surveys were not related to each other. The first survey was carried out between April 18, 2014 and April 29, 2014 and the second between April 16, 2017 and April 24, 2017. The mean age of the sample at t_1 was 49.79 ± 13.62 years (range: 20 to 90 years). Educational level was distributed as follows: 0.23% had no degree, 12.00% had 9 years of schooling, 30.33% had O-level (middle degree, "Realschule", about 10 years), 22.61% A-level ("Abitur"), 32.18% had obtained a University degree, and 2.65% had a doctorate.

Statistical procedures were carried out with the SAS 9.4 software package for Windows. Ordinal regressions were used for analyzing the effect of for age, gender, and education on the frequency of sharing dreams. The variables were entered simultaneously. Effect sizes for each variable were computed using Chi-Square values according to formulas given by (Cohen, 1988). A Wilcoxon Signed Rank test for analyzing the change dream sharing frequency was carried out with the SPSS 25 software package for Windows.

3. Results

The dream recall frequencies at t_1 (2014) were distributed as follows: never (7.50%), less than once a month (14.65%), about once a month (7.27%), about 2 to 3 times a month (13.26%), about once a week (18.22%), several times a week (27.45%, and almost every morning (11.65%). At t_2 (2017), the slightly different categories were as follows: never (5.90%), less than once a year (5.66%), about once a year (3.24%), about 2 to 4 times a year (11.68%), about once a month (10.40%), about 2 to 3 times a month (17.69%), about once a week (18.73%), and several times a week (26.71%) with two missing values. The correlation between the two measures was r = .663 ($p < .0001$, $N = 865$).

The distributions of the frequency of sharing dreams for the two measurement points are depicted in Table 1. About 8% of the participants shared dreams quite frequently (once a month or more often) in 2014; this percentage increased in 2017 to about 11%. About 20% of the participants stated that they never shared dreams. The changes in dream sharing frequency are shown in Table 2. Although there is a slight shift in sharing dreams more often in 2017 compared to 2014, this difference was not statistically significant (Wilcoxon Signed Ranks test: $z = 0.8$, $p = .449$). For about 70%, dream sharing frequency was stable (including changes of 0 and ±1). The Spearman Rank correlation amounted to r = .673 ($p < .0001$). The change in dream sharing frequency showed a marginally significant decline with age (standardized estimate = -.0619, $Chi^2 = 3.3$, $p = .0698$), a stronger decline for women (standardized estimate = -.0846, $Chi^2 = 6.1$, $p = .0136$), and no association with education (standardized estimate = .0208, $Chi^2 = 0.4$, $p = .5381$). The explained variance for this ordinal regression was $R^2 = .0104$. The cross-sectional analyses (see Table 3) indicated that the gender difference was somewhat smaller at t_2 (2017) compared to t_1 (2014).

4. Discussion

The findings indicate that the frequency of sharing dreams did not change over a three-year period and that inter-individual differences are quite stable. This would be in line with the life-style hypothesis of Schonbar (1965) who postulated a stable "dream trait". Thus, the previously reported decline of dream sharing frequency (Olsen et al., 2013; Schredl et al., 2014; Schredl & Bulkeley, 2019) in cross-sectional designs very likely reflect cohort effects, e.g., persons raised in different time periods develop different attitudes towards dreaming in general and dream sharing in particular.

The distribution of dream recall frequency of the present sample reflects an overrepresentation of high dream recallers compared to representative samples (cf. Schredl & Göritz, 2017), that is, about 57% of the persons who recalled their dreams once a week or more often in the present online sample versus about 23% in the representative samples (Schredl, 2008, 2013). This indicates that percentages regarding dream sharing would be considerably lower in representative sample as dream sharing frequency is closely related to dream recall frequency (Schredl & Schawinski, 2010). On the other hand, the larger proportion of low recallers (recalling dreams less than once a month) in the representative sample (about 55% vs. about 22% in the present sample) would very likely increase the stability coefficient of dream sharing frequency as those persons would not share dreams at t1 nor at t2 (no recall – no dream sharing). Another problem is that it was not possible to assess differences over time for dream recall frequency as two different scale formats were used. However, other studies recruiting participants within the same panel (Schredl et al., 2019; Schredl & Göritz, 2015) indicated small decreases in dream recall frequency over a three-year or five-year period.

Table 1. Frequency of sharing dreams (N = 867)

	2014		2017	
Category	Frequency	Percent	Frequency	Percent
Several times a week	26	3.00%	20	2.31%
About once a week	44	5.07%	73	8.42%
two or three times a month	82	9.46%	76	8.77%
About once a month	115	13.26%	109	12.57%
About two or four times a year	194	22.38%	170	19.61%
About once a year	79	9.11%	81	9.34%
Less than once a year	137	15.80%	169	19.49%
Never	190	21.91%	169	19.49%

Table 2. Changes in dream sharing (N = 867) over a three-year interval

Change	Dream sharing frequency		
	N	Percent	Percent
+7	1	0.12%	
+6	4	0.46%	
+5	3	0.35%	
+4	12	1.38%	32.99%
+3	32	3.69%	
+2	80	9.23%	
+1	154	17.76%	
0	320	36.91%	36.91%
-1	136	15.69%	
-2	75	8.65%	
-3	30	3.46%	
-4	14	1.61%	30.10%
-5	6	0.69%	
-6	0	0.00%	
-7	0	0.00%	

For most participants dream sharing frequency remained quite stable over the three year period; the slight overall increase was not significant. The two cross-sectional analyses also showed a decline with age – even if dream recall frequency is statistically controlled for (not depicted but see: Schredl et al., 2014) – and, thus, indicates that the decline with age in cross-sectional designs might be attributed to cohort effects. The stability (high correlation coefficient between t_1 and t_2) and the large inter-individual variability in dream sharing frequency supports the notion of a "life-style" as put forward by Schonbar (1965). She characterized this trait by high recallers as being more in touch with their inner world, e.g., high daydreaming frequency, being more aware of discomforts, but not being very interested in scientific topics or achievements in technical areas. This is supported by studies showing that mindfulness is related to dream recall (Schredl, Stumbrys, & Erlacher, 2016) and training in Autogenic Training, a relaxation technique with a strong focus on inner awareness, increases dream recall (Schredl & Doll, 1997). As, for example, openness to experience is much more strongly related to attitude towards dreams than to dream recall frequency itself (Schredl & Göritz, 2017; Schredl, Wittmann, Ciric, & Götz, 2003), one might slightly reformulate Schonbar (1965)'s theory that attitude towards dreams and how the person deals with dreams are part of a life style: whereas dream recall frequency is affected by life-style, it is also affected by other variables, e.g., sleep variables (overview: Schredl, 2007). This might explain why dream recall might decrease with age (due to changes in sleep physiology, for example) but that there are no changes or even increases in attitude towards dreams (Schredl et al., 2019) and dream sharing frequency with age (present data). As we did not have any data from these three years, it would be very interesting to study whether life events like undergoing psychotherapy or experiencing life-changing dreams have an effect on dream recall in general and dream sharing frequency in particular. Being in psychotherapy increases dream recall and – if dreams were part of the treatment – naturally increases dream sharing frequency (Schredl, Bohusch, Kahl, Mader, & Somesan, 2000). Having developed a sleep disorder like sleep apnea syndrome is, for example, also related to heightened dream sharing frequency (Schredl & Schmitt, 2019). Interestingly, the change in dream sharing frequency was associated with gender, e.g., the gender difference at t_2 was smaller compared to the gender difference at t_1 (see Table 3). This might also be an indication that the stable trait might be affected by life events.

To summarize, the findings of the present longitudinal study clearly indicate that frequency of sharing dreams is very stable – a "dream-related trait". Given this stability and the large inter-individual differences, ranging from not sharing dreams at all to regularly sharing dreams, it would be very interesting to study how this trait develops in childhood/adolescence. A first study in 12-year-olds indicated that being asked by parents about their dreams is associated with a more positive attitude towards dreams in these young people (Schredl, Buscher, Haaß, Scheuermann, & Uhrig, 2015).

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Table 3. Ordinal regression analyses for dream sharing frequency (N = 867)

Variable	Dream sharing frequency (2014)				Dream sharing frequency (2017)			
	SE	χ^2	p	Effect size	SE	χ^2	p	Effect size
Age	-.2074	36.5	<.0001	0.474	-.2617	57.3	<.0001	0.532
Gender	.2030	35.0	<.0001	0.410	.1360	16.1	<.0001	0.275
Education	.0884	15.2	.0084	.0180	.1031	9.5	.0021	0.211

SE = Standardized estimates

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