

Dreaming

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Dream Changes Across the First Three Waves of the COVID-19 Pandemic in Italy

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The 2019 novel Coronavirus (COVID-19) has strongly impacted the world. Recent research findings found significant effects of the pandemic on dreaming. We investigated sociodemographic, COVID-19-related variables, and oneiric activity (by the Most Recent Dream) during the first, the second, and the third wave of the COVID-19 pandemic in three matched samples, for a total of 600 Italian adult subjects (82.7% women; aged 18–81 years, $M = 30.4$, $SD = 13.3$). Results indicated that: (a) the majority of participants were medium recallers; (b) during the first wave of the COVID-19 pandemic, participants reported higher negative emotions and longer dreams; (c) during the second wave, participants reported higher positive emotions and lower presence of sensory impressions in their dreams; (d) during the third wave, participants reported lower positive emotions in their dreams; and (e) participants knowing a COVID-19 death reported shorter dreams and higher negative emotions in their dreams, while student participants reported longer and more realistic dreams. Results of the quali-quantitative analyses revealed recurring themes in the Most Recent Dreams, as well as a strong continuity with the waking experience, especially focused on family and friends, as well as on places where the quarantine was lived and on the outside world. In sum, the findings of this study indicate that the COVID-19 pandemic understood as a high-impact and traumatic event, significantly affects people's dreams, especially in terms of elicited emotions, as well as in terms of themes related to the pandemic.

Keywords: COVID-19, dreams, continuity hypothesis, psychoanalysis, traumatic events

The 2019 novel Coronavirus (COVID-19) was declared a global pandemic by the World Health Organization on March 11, 2020. Since then, data regarding both infections and deaths have been steadily increasing, affecting 228 countries or regions all around the world and leading governments to adopt strong and repeated lockdown measures to reduce the spread of contagion, resulting in a drastic form of social isolation which historically has never before been seen.

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Italy is the fourth European country most affected by the pandemic and the ninth in the world, with 19,810,287 confirmed cases and 169,547 deaths (at the time of writing: July 2022) (Worldometer, 2022). During the first three waves of the pandemic, the Italian government put in place very strict lockdown measures that included home confinement and social distancing for the entire population except for proven work needs, emergencies, or health reasons to be declared by special self-certification.

In November 2020, the so-called “containment by differentiated scenarios” is launched. Based on this system and in relation to the severity of restrictions, Italian regions were classified according to four levels of increasing risk: “White zone,” “Yellow zone,” “Orange zone,” and “Red zone.” This classification was then periodically updated based on contagion-related data monitoring.

The first Italian and international studies investigating the psychological consequences of the pandemic have shown a significant increase in individual and relational psychological distress, anxiety, and depression (Benke et al., 2020; Bevan et al., 2023; Casagrande et al., 2020; Forte et al., 2021; Génèreux et al., 2020; Giallonardo et al., 2020; Huang & Zhao, 2020; Rossi et al., 2020; Sommantico, 2010; World Health Organization, 2020; Zurlo et al., 2020). Having the effects of the COVID-19 pandemic affected all aspects of the individual (at physical, psychological, economic, and relational levels) and social lives, we can surely define this period as traumatic.

According to the continuity hypothesis (e.g., Barrett, 2001; Hartmann & Basile, 2003; Rosen et al., 1991; Schredl, 2006), as well as the psychoanalytic understanding (e.g., Fosshage, 1983; Freud, 1900; Sommantico, 2016), dreams and dreamt emotions have been demonstrated to be reflective of waking day events. Indeed, findings in the literature on dream studies related to catastrophic and/or traumatic events (e.g., Barrett, 2001; Hartmann & Basile, 2003; Rosen et al., 1991; Schredl, 2006; Varvin et al., 2012) show a strong impact of these events on dream content due to their emotional salience. Moreover, research findings have shown that poorer psychological well-being and health-related worries were associated with dream imagery, especially sadness, anger, as well as health/illness and aggression-related imagery (King & DeCicco, 2007; Schredl et al., 2016; Sommantico et al., 2015).

According to those theoretical frameworks, findings in the literature of dream studies on populations subject to the COVID-19 lockdown measures (e.g., Borghi et al., 2021; Cong et al., 2022; Gallagher & Incelli, 2021; Guo & Shen, 2021; Iorio et al., 2020; Kilius et al., 2021; Margherita et al., 2021; Mariani, Gennaro, et al., 2021; Mariani, Monaco, et al., 2021; Marogna et al., 2021; Mota et al., 2020; Parrello & Sommantico, 2022) have shown that the isolation-quarantine situation has a strong impact on dreaming. More specifically, several studies indicated the impact of the COVID-19 pandemic on dream and nightmare recall frequency (e.g., Alghamdi et al., 2022; Conte et al., 2022; Fränkl et al., 2021; Giovanardi et al., 2022; Gorgoni et al., 2021; Gorgoni, Scarpelli, Alfonsi, & De Gennaro, 2022; Guerrero-Gomez et al., 2021; Guo & Shen, 2021; Kennedy et al., 2022; Margherita et al., 2021; Musse et al., 2020; Parrello et al., 2021; Scarpelli et al., 2021; Schredl & Bulkeley, 2020; Schredl et al., 2022; Solomonova et al., 2021; Sommantico, Iorio, Lacatena, & Parrello, 2021), as well as on dream and nightmare content and emotion. In particular, participants who experience COVID-19 more directly reported higher emotional intensity in their dreams, characterized by a higher presence of sensory impressions (e.g., Barrett, 2020; Iorio et al., 2020; Parrello et al., 2021; Schredl &

Bulkeley, 2020; Sommantico, Iorio, Lacatena, & Parrello, 2021). Furthermore, during the pandemic, dream imagery was characterized by a high presence of virus-related themes, particularly by anxieties and concerns related to COVID-19 contagion (e.g., Giovanardi et al., 2022; Le Bel & DeCicco, 2022; MacKay & DeCicco, 2020; Margherita et al., 2021; Monaco et al., 2022; Parrello et al., 2021; Pesonen et al., 2020; Sommantico et al., 2022; Sommantico, Iorio, & Parrello, 2021; Šćepanović et al., 2022; Wang et al., 2021).

Furthermore, findings in the literature of longitudinal dream studies during the different waves of COVID-19 (e.g., Alfonsi et al., 2022; Conte et al., 2022; Goncalves et al., 2022; Gorgoni, Scarpelli, Alfonsi, Annarumma, et al., 2022; Scarpelli et al., 2021, 2022) highlighted that its impact persisted on dream features, such as frequency, length, vividness, and negative emotionality, despite a sort of adaptation to the pandemic situation (e.g., Conte et al., 2022; Meaklim et al., 2023). More in particular, research findings have shown a decrease in dream frequency, length, emotional load, vividness, and bizarreness after the total first wave lockdown, as well as a reduction in specific lockdown-related dream themes, but no significant modifications in the negative dream emotional tone (e.g., Alfonsi et al., 2022; Gorgoni, Scarpelli, Alfonsi, Annarumma, et al., 2022; Scarpelli et al., 2022). Moreover, comparing dreaming during the first and the second pandemic waves, Scarpelli et al. (2021) found a decrease in dream frequency and emotional intensity, while an increase in dream negative emotional valence. Finally, Goncalves et al. (2022) reported that only 5% of the participants reported having COVID-19-related nightmares often/almost always/always (Stable severe profile).

The Current Study: Aims and Hypotheses

The current study, part of a broader research project on the effects of the COVID-19 pandemic on psychological well-being and dreaming (e.g., Iorio et al., 2020; Parrello et al., 2021; Sommantico et al., 2022; Sommantico, Iorio, Lacatena, & Parrello, 2021; Sommantico, Iorio, & Parrello, 2021), aimed to analyze feature changes in dreams across the three first waves of the COVID-19 pandemic in Italy.

Based on the above-mentioned literature, we hypothesized that the dreams of people living with the strongest quarantine/isolation measures of the first pandemic wave were characterized by a high presence of virus-related themes, negative emotional tone, and negative emotions (H1). We also hypothesized that dreams of people living with the reduced quarantine/isolation measures of the second and the third pandemic waves were characterized by a reduction in specific lockdown-related dream themes, as well as in dream length, vividness, and bizarreness (H2). In particular, regarding the differences between dreams' emotional tone across the three waves of the COVID-19 pandemic, we hypothesized: (a) an elicitation of more negative emotions in dreams during the first wave in relation to the highly traumatic impact of the pandemic, as well as to the uncertainty regarding the timing of the pandemic; (b) a decrease in negative emotions during the second wave in relation to an adaptation mechanism; (c) and a re-increase in negative emotions elicited in dreams during the third wave in relation to the presence of a sense of disillusionment with respect to the timing of the pandemic's conclusion (H3). Furthermore, we hypothesized that the dreams of people who experienced COVID-19 more directly were characterized by higher emotional intensity and the presence of sensory

impressions (H4). Finally, we hypothesized that, during the second and the third pandemic waves, dream imagery was less characterized by anxieties and concerns related to COVID-19 contagion, as well as that Most Recent Dreams (MRDs) were characterized by themes related to significant people and places (H5).

Method

Procedure and Participants

Participants were recruited via the Internet from April 2020 to May 2020 (T1; see Iorio et al., 2020), from November 2020 to January 2021 (T2; see Sommantico et al., 2022), and from March 2021 to April 2021 (T3; see Sommantico, Iorio, & Parrello, 2021), according to the following criteria: at least 18 years of age and compliant with the quarantine/isolation measures. All data were collected through self-report questionnaires, using an Internet-based survey (Hewson et al., 2016). Participation in the study was voluntary, anonymous, and unpaid. All participants included in the study gave consent to participate on the first page of the survey. The informed consent included detailed information about the aims and procedures of the study, confidentiality, and the anonymity of the responses. Participants completed a sociodemographic questionnaire, dream recall frequency, and the MRD (Domhoff, 2003).

The study complied with the American Psychological Association (APA) ethical standards in the treatment of human research participants and conformed to the provisions of the 1964 Helsinki Declaration and its later amendments. Furthermore, the study was approved by the Ethical Committee of Psychological Research of the Department of Humanities of the University of Naples Federico II (prot. no. 14/2020 and prot. no. 30/2020).

At T1, there were 796 respondents (73.2% women; aged 18–79 years, $M = 30.3$, $SD = 12.8$); at T2, there were 314 respondents (79.9% women; aged 18–73 years, $M = 28.5$, $SD = 12.2$); and at T3, there were 329 respondents (76% women; aged 18–83 years, $M = 37.23$, $SD = 16.0$). Consequently, the three initial samples were matched on a case-by-case basis, for gender, age, education, and profession, to ensure that demographic differences do not skew group data and were then reduced to three samples of 200 participants each. The final total sample consisted of 600 subjects (82.7% women; aged 18–81 years, $M = 30.4$, $SD = 13.3$). The sample had a high level of education, with 47.8% having completed secondary school, and 47% of the participants having completed a university degree or a postuniversity degree. Most participants (56.3%) were students (36.7% employed and 7% unemployed or retired). Participants who knew someone infected by COVID-19 were 71.7%, and participants who knew someone who died of COVID-19 were 24.7% (for demographic, see Table 1).

Measures

Sociodemographic Questionnaire

Respondents provided sociodemographic data (e.g., age, gender, level of education, and profession) via a basic sociodemographic questionnaire. Respondents were also asked whether they knew people affected by or who have died of COVID-19.

Table 1
Descriptive Statistics

Variables	T1 (n = 200)		T2 (n = 200)		T3 (n = 200)		Total sample (N = 600)	
	M/N	SD (%)	M/N	SD (%)	M/N	SD (%)	M/N	SD (%)
Age	30.5	13.2	30	12.9	30.7	13.8	30.4	13.3
Gender								
Male	34	17	34	17	36	18	104	17.3
Female	166	83	166	83	164	82	496	82.7
Education								
Until middle school	11	5.5	12	6	8	4	31	5.2
High school	92	46	97	48.5	98	49	287	47.8
Graduate or more	97	48.5	91	45.5	94	47	282	47
Occupation								
Student	111	55.5	116	58	111	55.5	338	56.3
Employed	76	38	71	35.5	73	36.5	220	36.7
Unemployed or retired	13	6.5	13	6.5	16	8	42	7
Knowing COVID case								
Yes	68	34	173	86.5	189	94.5	430	71.7
No	132	66	27	13.5	11	5.5	170	28.3
Knowing COVID death								
Yes	19	9.5	57	28.5	72	36	148	24.7
No	181	90.5	143	71.5	128	64	452	75.3
Dream length	137.1	120	47.9	61.3	99.8	133.9	95	115.5
Recallers								
Low	30	15	45	22.5	39	19.5	114	19
Medium	68	34	119	59.5	89	44.5	276	46
High	102	51	36	18	72	36	210	35
Positive emotions	1.4	1.1	2.2	0.6	1	1.1	1.5	1.1
Negative emotions	2	1.1	1.2	0.7	1.9	1	1.7	1
Realism/bizarreness	1.6	1	1	0.8	1.5	1	1.4	1
Sensory impressions	1.8	1	1.3	0.9	1.7	1	1.6	1

Dream Recall Frequency

Dream frequency recall was measured on a 7-point scale (0 = Never; 1 = Less than once a month; 2 = About once a month; 3 = About 2–3 times a month; 4 = About once a week; 5 = Several times a week; 6 = Almost every morning) (Schredl et al., 2014; Settineri et al., 2019). According to Schredl’s recommendations (2002), participants were divided into three categories: (a) Low recallers = Never to About once a month; (b) Medium recallers = About 2–3 times a month to About once a week; and (c) High recallers = Several times a week to Almost every morning.

Most Recent Dream (MRD)

Participants were asked to report their MRD (Domhoff, 2003) and to (a) describe the dream that occurred during the last month exactly and as fully as they could remember it; (b) describe the setting of the dream, whether it was

familiar or not; (c) describe the people and their sex, age, and relationship to the dreamer; (d) describe any animals or objects that appeared in the dream; (e) describe their feelings during the dream and whether they were pleasant or unpleasant; and (f) tell exactly what happened during the dream to themselves and the other characters. Participants were also asked to self-rate their dream (Domhoff, 2003; Schredl, 2002, 2010) regarding the following: the intensity of the Positive emotions of the dream (measured on a 4-point Likert-type scale, ranging from 0 = No emotions to 3 = Intense emotions), the intensity of the Negative emotions of the dream (measured on a 4-point Likert-type scale, ranging from 0 = No emotions to 3 = Intense emotions), the Realism/bizarreness of the dream (measured on a 4-point Likert-type scale, ranging from 0 = Realistic dream to 3 = Bizarre dream), and the presence of Sensory impressions in the dream (measured on a 4-point Likert-type scale, ranging from 0 = No sensory impressions to 3 = Strong sensory impressions).

Data Analysis Plan

Survey data were then entered into SPSS 26.0 (IBM Corp., 2015) for the quantitative analyses and T-LAB (Lancia, 2004) for the quali-quantitative analyses. Data were checked/verified by project staff for accuracy, to preserve the meaning-making process carried out by the researcher.

Descriptive analyses were conducted to outline the sociodemographic characteristics of the sample, as well as the COVID-19-related variables, by considering the following features: age, gender, level of education, profession, and relationship to people affected by or died of COVID-19. Group differences were verified through analysis of variance (ANOVA) and Tukey tests (p -value $< .05$). Effect sizes were measured through Eta-square (η^2 ; small $\geq .01$; medium $\geq .059$; large $\geq .138$) (Cohen, 1988).

The MRDs' text corpora went through a stemming process (automatic lemmatization), and a Thematic Analysis of Elementary Contexts was performed. The text was partitioned into elementary context units (e.c.u.), each being approximately the length of a sentence. The units were then classified according to the distributions of words in terms of co-occurrences. Cluster analysis was carried out by an unsupervised ascendant hierarchical method (Bisecting K -Means Algorithm). The co-occurrence of semantic features characterizes this analysis. Each cluster consisted of a set of keywords (specific vocabulary), which were ranked according to the decreasing value of chi-square, and of a selection of elementary contexts (max. 20 for each cluster), which were sorted by the weighted descending order of characteristic words. A label was then assigned to each of them.

Results

Descriptive Statistics and Group Differences

Regarding the dream recall frequency, most participants (46%) were medium recallers (19% low recallers and 35% high recallers). The mean dream length was 95 words ($SD = 115.5$). Regarding the intensity of emotions, participants reported

medium positive emotions ($M = 1.5$; $SD = 1.1$) and higher negative emotions ($M = 1.7$; $SD = 1.1$). Regarding realism/bizarreness, participants reported medium realism ($M = 1.4$; $SD = 1$). Finally, regarding the presence of sensory impressions, participants reported a medium presence of sensory impressions ($M = 1.6$; $SD = 1$; see Table 1).

ANOVA and Tukey tests showed significant differences (see Table 2). Indeed, participants at T1 reported significantly higher negative emotions and longer MRDs; participants at T2 reported significantly higher positive emotions and lower presence of sensory impressions in their MRDs, as well as more realistic and shorter MRDs; while participants at T3 reported significantly lower positive emotions; participants personally knowing a COVID-19 case or death reported shorter MRDs, while participants knowing a COVID-19 death also reported significantly higher negative emotions and presence of sensory impressions in their MRDs; finally, student participants reported significantly longer as well as more realistic MRDs. No gender differences were found.

Table 2
Analysis of Variance

Gender	<i>F</i>	<i>M</i>	<i>F (gl)</i>	<i>p</i>	η ²	
Positive emotions	1.5	1.6	0.34 (1, 598)	.555	.00	
Negative emotions	1.7	1.6	1.65 (1, 598)	.199	.00	
Realism/bizarreness	1.4	1.4	0.28 (1, 598)	.595	.00	
Sensory impressions	1.6	1.6	0.07 (1, 598)	.787	.00	
Dream length	99.0	75.9	3.46 (1, 598)	.064	.01	
COVID-19 waves	I	II	III	<i>F (gl)</i>	<i>p</i>	η ²
Positive emotions	1.4	2.2	1.0	83.86 (1, 597)	.000	.22
Negative emotions	2.0	1.1	1.9	47.02 (1, 597)	.000	.14
Realism/bizarreness	1.6	1.0	1.5	22.44 (1, 597)	.000	.07
Sensory impressions	1.8	1.3	1.7	16.12 (1, 597)	.000	.05
Dream length	137.1	47.9	99.8	33.38 (1, 597)	.000	.10
	Yes	No	<i>F (gl)</i>	<i>p</i>	η ²	
Knowing COVID-19 case						
Positive emotions	1.6	1.5	0.41 (1, 598)	.411	.00	
Negative emotions	1.7	1.8	1.43 (1, 598)	.199	.00	
Realism/bizarreness	1.4	1.5	1.01 (1, 598)	.595	.00	
Sensory impressions	1.6	1.6	0.42 (1, 598)	.787	.00	
Dream length	84.7	120.8	12.13 (1, 618)	.001	.02	
Knowing COVID-19 death						
Positive emotions	1.6	1.5	0.46 (1, 598)	.497	.00	
Negative emotions	1.9	1.6	10.36 (1, 598)	.001	.02	
Realism/bizarreness	1.3	1.4	0.68 (1, 598)	.409	.00	
Sensory impressions	1.8	1.5	10.60 (1, 598)	.001	.02	
Dream length	70.1	103.1	9.19 (1, 618)	.003	.01	
Occupation	Student	Employed	Unemployed/ retired	<i>F (gl)</i>	<i>p</i>	η ²
Positive emotions	1.5	1.6	1.4	0.86 (1, 597)	.424	.00
Negative emotions	1.7	1.7	1.8	0.46 (1, 597)	.622	.00
Realism/bizarreness	1.5	1.3	1.4	3.24 (1, 597)	.040	.01
Sensory impressions	1.5	1.6	1.7	0.97 (1, 597)	.380	.00
Dream length	113.8	73.4	55.7	11.13 (1, 597)	.000	.04

Quali-Quantitative Analyses

The participants’ text corpus (600 MRDs) was characterized by 56,534 occurrences (4,333 lemmas, 7,587 distinct forms; threshold = 7). Within the corpus, 1,314 e.c.u. were identified (of which 1,285 [97.8%] were classified)). All sociodemographic variables as well as the three waves were included as illustrative variables. The analysis highlighted four clusters (see Table 3).

Cluster 1, *home confinement*, comprised 358 e.c.u. (of a total of 1,285 [27.9%]). Specific vocabulary- follows: room, search, dog, enter, strange, door, notice, hallway, small, fear, children, window, throw, scream, cat, cry, touch, green. Examples of e.c.u. follow: “I was in my current house, which I think is too small since we are all forced to do smart working or distance learning. I discovered that there was an extra room that I had never noticed. It resembled the room I moved into, as a child when my brother was born. I was happy and communicated this to my daughters by saying, you won’t have to share a room anymore.” “I would go there to visit my aunt and uncle and my mother. After entering the house, I would walk down the long hallway leading to the dining room from which you could see the grandparents’ bedroom and the bed. On the bed was the body of my dead grandfather. Next to him, there was my uncle and a cousin who also lived with my aunt and uncle.” “I dreamed I was moving to another room and there was a girl I didn’t know dead on the floor surrounded by a pool of blood, and I knew I had to leave because otherwise, everyone would think I had killed her. There were no more doors or windows in the room, so I hid under a table crying and hoping it would end.” “I had to fight against a dragon (very similar to the dragon in the animated film (The enchanted city) who was trying everything to get into the house. So, I would run around the house and close doors and windows as fast as I could, to keep him from entering. It would seem that I was able to protect my family.”

Cluster 2, *the outside*, comprised 235 e.c.u. (of a total of 1,285 [18.3%]). Specific vocabulary- follows: road, professor, chase, mate, ship, university, square, find, group, people, place, sea, make, run, school, succeed, building, jump, sense, center. Examples of e.c.u. follow: “I was alone at first, running down the street to go to my girlfriend. On the way I found many difficulties, people blocking my way, wind or forced detours, but in the end, I managed to get to my destination to her. I remember hugging her and then waking up.” “I trudged behind him walking fast and arrived at a square I lost sight of him, distracted by a multitude of policemen in riot gear occupying the center of the square. The atmosphere was quiet, there were few people on the street, it was dark, but you could feel that something was about to happen.” “I was in the school building I attended in my junior high school

Table 3
Clusters of Participants’ MRDs

Cluster	<i>n</i>	Percent	Name
1	358	27.9	Home confinement
2	235	18.3	The outside
3	372	28.9	The family
4	320	24.9	Friends, boyfriends, and people

Note. MRD = most recent dream.

years, leaving the classroom during class with an old comrade of mine, whom I happen to meet in the neighborhood but have lost contact with. We were in the mood for fun, walking around the school laughing and joking. At one point the professors found us and told us to go back to the classroom.” “I was at the university in home-room not from my university however it was as if I had started my master’s degree there were a lot of people, I knew both from my university and friends so all my age plus or minus 22 and we didn’t have masks, there were many of us and we were all talking to each other.”

Cluster 3, *the family*, comprised 372 e.c.u. (of a total of 1,285 [28.9%]). Specific vocabulary- follows: mother, ask, father, brother, reality, she, grandfather, uncle, answer, cousin, me, enthusiastic, sleep, wake up, marriage, actor, bound, you, woman, sweet. Examples of e.c.u. follow: “My father left home after the first lockdown, probably with her, but I am not sure. Anyway, in this dream, I was with my mother and sister, and we were on our way to McDonald’s in one of the neighboring towns when suddenly I meet my father: I make to follow him, and I find him in the car with this very woman laughing and joking.” “In the dream, it was me, my brother, and my mother. My mother was complaining of symptoms of neurodegenerative disease, so much so that shortly afterward I had to tell my brother that she had been diagnosed with this disease; I remember crying and my mother could no longer understand me. The place felt like I was in my own home. Of course, it had an unpleasant connotation.” “I was in the nice bathroom of my house with my mother, my father, my aunt, my younger cousin than me, my older cousin than me, my grandmother, my niece, and my cousin’s husband. I had a feeling that was neither pleasant nor unpleasant. The bathroom was bright. Suddenly I see blood on the floor and start cleaning confused. I wake up.” “I try to call my mother, then my father, to see if they are all right, but no one answers, and I begin to be afraid. I am about to try to call my younger brother when my mother calls me back.”

Cluster 4, *friends, boyfriends, and people*, comprised 320 e.c.u. (of a total of 1,285 [24.9%]). Specific vocabulary- follows: dream, feeling, boyfriend, place, friend, people, dear, familiar, examination, pleasant, time, remember, period, awakening, church, situation, try, day. This cluster was also associated with the illustrative variable second wave of the COVID-19 pandemic. Examples of e.c.u. follow: “I dreamed that I was on vacation with a friend and my fiancé and while I was on a sidewalk with the two of them, I saw people passing by who are dear to me but belong to the past. I would try to say hello and look at them, but they didn’t see me and kept talking to the people who were by their side.” “It was my birthday, and I was having a party in spite of COVID and suddenly I realize that no one respects COVID norms, not even me so I start covering my face somehow and avoiding people or otherwise keeping my distance. I dreamed of old friends and people with whom I currently have strong ties. I had a feeling that things had gotten out of hand.” “I dreamed of a church in which my friends were present. Instead of pews, there were small tables. It seemed that the church had turned into a pub. I called another friend of mine for a sandwich, and when he arrived, the church had turned back into a church. I persisted in repeating the pub story, but he did not believe me.” “I remember little because I dreamed about it some time ago, the first week perhaps of emergency with seclusion. But the funny thing was that I was dreaming of a totally regular daily reality like I always had, and when I realized the dream, I was thinking how absurd it was.”

Discussion

The current study examined the MRDs reported by Italian adult subjects during the three waves of the COVID-19 pandemic.

Our results are consistent with previous studies on dreaming during the time of COVID-19, indicating that participants who experienced COVID-19 more directly also reported higher emotional intensity in their dreams, characterized by a higher presence of sensory impressions (e.g., Barrett, 2020; Iorio et al., 2020; Parrello et al., 2021; Schredl & Bulkeley, 2020; Sommantico et al., 2022; Sommantico, Iorio, Lacatena, & Parrello, 2021; Sommantico, Iorio, & Parrello, 2021). Indeed, also in our study, participants personally knowing a COVID-19 death reported significantly higher negative emotions and the presence of sensory impressions in their MRDs, thus confirming our H4. According to the transformative function of dreams and dreaming (e.g., Fossage, 2007; Sommantico, 2018), we can interpret these data by affirming that experiencing COVID-19 more directly could stimulate a dream job that would express itself in a high negative dream's emotional intensity. These data are in line with the continuity hypothesis of dreaming and waking life, especially as applied to traumatic events (e.g., Barrett, 2001; Hartmann & Basile, 2003; Rosen et al., 1991; Schredl, 2006), according to which significant events in waking life can be associated with dreamt emotions and impressions. These data are also in line with psychoanalytic thinking (Adams-Silvan & Silvan, 1990; Freud, 1915–1917; Velotti & Zavattini, 2019), attesting that dream can be interpreted as an attempt at the fulfillment of repressed wishes, but also as a way of mastering and transforming waking life traumatic events.

Furthermore, our results are only partly consistent with recent longitudinal studies on dreaming during the time of COVID-19 (e.g., Alfonsi et al., 2022; Conte et al., 2022; Gorgoni, Scarpelli, Alfonsi, Annarumma, et al., 2022; Meaklim et al., 2023; Scarpelli et al., 2021, 2022). Indeed, during the first wave of the COVID-19 pandemic, participants reported higher negative emotions and longer MRDs; during the second wave, participants reported higher positive emotions and lower presence of sensory impressions in their MRDs, as well as more realistic and shorter MRDs; while, during the third wave, participants reported lower positive emotions. These differences between dreams' emotional tone across the three waves of the COVID-19 pandemic and confirming our H1, H2, and H3 could be interpreted in light of the fact that, during the first spread of the pandemic, participants elicited more negative emotions in their dreams in relation to the highly traumatic impact of the pandemic, as well as to the amount of news spread by the media that spoke of an enormous uncertainty regarding the timing of the pandemic. During the second wave, on the other hand, it is possible to hypothesize that the decrease in negative emotions, and the correlative increase in positive ones, are linked to the hope that the end of the pandemic was closer, as well as to the adaptation mechanism hypothesized by Conte et al. (2022), also in light of the news spread by the media and the data from research institutes that suggested a short-term end to the pandemic. Finally, the subsequent re-increase in negative emotions elicited in dreams during the third wave of the COVID-19 suggests the presence of a sense of disillusionment with respect to the timing of the pandemic's conclusion, well expressed by the population's widespread statement, "We'll never get out of this!"

Finally, student participants reported significantly longer dreams as well as more realistic MRDs. In interpreting these data, and according to previous studies (e.g., Conte et al., 2022; Fränkl et al., 2021; Giovanardi et al., 2022; Musse et al., 2020; Scarpelli et al., 2021; Sommantico, Iorio, & Parrello, 2021), we can hypothesize that a significant role was played both by the fact that adolescents and young adults were the individuals most affected by the restrictive measures, whose lives were therefore dramatically changed at both academic, social, and personal levels and by the fact that they were singled out by the mass media as one of the first sources of contagion for the adult and older population. This double pressure placed on them could have resulted in a more intense effort to master the waking life traumatic situation related to the COVID-19 pandemic, resulting in a dreamwork producing more realistic and longer MRDs.

The quali-quantitative analysis of the MRDs has also added important data confirming our H1, H2, and H5. The textual analysis highlighted recurring themes in the MRDs, as well as a strong continuity with the waking experience. The first finding from the qualitative part of this study is that the illustrative variables included were not found to be associated with specific clusters, except for one (Second Wave). This indicates that the main themes of the dreams are not different in relation to the socio-demographic variables considered and did not change during the first three waves of the pandemic. The second relevant finding is that all the themes are related to isolation and fear of loss of significant others: inside-outside, separation from family, partners, and friends. This is evidently the central traumatic knot of this long collective experience that dreams attempt to process, at least until the advent of mass vaccination in April 2021, which allowed for a relaxation of restrictive measures and especially isolation, through the display of the green pass. Cluster 4, the only one associated with the illustrative variable Second Wave, particularly insists on the transformation of relationships with boyfriends and friends—which are perhaps thought to be affected more by distance than those with family members—as well as the dangerousness of others in general, which perhaps had been hoped to diminish after the first few months of the pandemic and instead becomes a constant and disorienting element. This is an important issue that supports that persecutory trait already typical of individuals in hypermodern society (Kaës, 2020) and that since April 2021 has probably changed by leaning on the distinction between vaccinated others, perceived as less dangerous, and unvaccinated others, perceived as more dangerous (Thoresen et al., 2021). Taken together, the results of the quali-qualitative analyses also seem to indicate the collective influence of the traumatic experience of the pandemic on individuals' oneiric life.

However, this study presents two major limitations: (a) possible biases implied in the convenience sampling strategy, such as volunteers' bias related to the special characteristics of individuals voluntarily participating in the study; and (b) not balanced sample with respect to gender.

Conclusions

The present study aimed to analyze changes in dream features and themes across the three first three waves of the COVID-19 pandemic in Italy, until the requirement to practice social isolation and distancing was active.

Results of the present study highlight the severe impact of the COVID-19 pandemic on individuals' oneiric life, by also indicating significant differences in dreams' emotional tone across the three waves of the COVID-19 pandemic. In fact, our results showed a decrease in negative emotions during the second wave, which increased again during the third wave, indicating a kind of loss of hope with respect to the timing of the pandemic's conclusion on the part of the study participants. Furthermore, results indicated that participants who experienced COVID-19 more directly also reported higher emotional intensity in their dreams, characterized by a higher presence of sensory impressions.

Moreover, according to the continuity hypothesis of dreaming and the psychoanalytic theory, results also show how a traumatic and/or catastrophic event, such as the COVID-19 pandemic, can appear in dreams both directly, through explicit references to the virus and its correlates, as well as through negative emotions related to stressful situations. In fact, participants dreamt of various aspects of the home confinement imposed by the pandemic, especially referring to physical places, living them as familiar, as well as too strict, or protecting themselves from external dangers. Participants also dreamt of the outside world, at the same time regretful, such as school or university places, but dangerous. Furthermore, participants dreamt of the family, with explicit reference to loss, abandonment, illness, as well as lockdown. Finally, participants dreamt, especially during the second wave of the pandemic, of friends, boyfriends, and people, where friends and boyfriends are a thing of the past and people can be a source of danger.

In sum, this study demonstrates the importance of integrating different theoretical approaches, as well as experimental and clinical perspectives, including both qualitative and quantitative analyses, for a deeper and more comprehensive analysis of dreaming.

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