HEALTH PROMOTION

The digital tether: a SA-SV based survey on smartphone addiction among young adults in Southern Italy

ROBERTO VENUTO[1,2], CATERINA ELISABETTA RIZZO[2,3], GIOVANNI GENOVESE[2,3], GIUSEPPE TRIMARCHI[4], GIUSEPPE LA SPADA[3], RAFFAELE SQUERI[3], VINCENZA LA FAUCI[3], CRISTINA GENOVESE[3]
[1] Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina, Messina, Italy; [2] Department of Prevention, Local Health Authority of Messina, Messina, Italy; [3] Department of Biomedical and Dental Sciences and Morphofunctional Imaging, University of Messina, Messina, Italy; [4] SIR, University of Messina, Messina, Italy

Keywords

Smartphone addiction • Smartphone problematic use • Young adults • SAS-SV • Digital behavior

Summary

Introduction. *In the post-pandemic era, smartphone usage has surged globally, particularly among young adults. While these devices offer convenience and connectivity, their excessive use has raised concerns about behavioral addiction and psychological well-being. This study investigates the prevalence of problematic smartphone use among young adults in Southern Italy, focusing on usage patterns and socio-demographic correlations.*
Methods. *A cross-sectional survey was conducted between March and June 2025 using an anonymous online questionnaire. The instrument combined ad hoc questions on lifestyle and digital habits with the validated Smartphone Addiction Scale-Short Version (SAS-SV). Participants aged 18-40 were recruited primarily from Sicily and Calabria via university and community networks. Data were analyzed using non-parametric statistical tests and chi-square analysis.*
Results. *The final sample included 451 respondents (average age: 22.42 years), predominantly Italian and non-working students. The SAS-SV identified smartphone addiction in 21.3% of participants, with no significant gender differences. Most users engaged with smartphones for leisure, social media, and entertainment. Significant associations were found between SAS scores and variables such as region, education level, and income. Notably, higher scores correlated with emotional reliance on smartphones and difficulty disengaging from use.*
Conclusion. *Problematic smartphone use affects over one-fifth of young adults in Southern Italy, driven more by app features than screen time alone. These findings underscore the need for targeted public health strategies, including early screening and behavioral interventions, to address digital dependency and promote healthier technology habits in this demographic.*

Introduction

Global smartphone use has surged in recent years, reflecting a growing dependence on these devices across all age groups [1, 2]. This trend is driven by their user-friendly interfaces, portability, and immediate access to a vast array of applications catering to diverse daily needs [3]. Projections indicate a continued worldwide increase of 1.7 billion users between 2025 and 2029, with the total number expected to reach a record 6.2 billion. This pattern is mirrored in Italy, where the number of users is forecasted to grow by 5.9 million to a total of 53.5 million by 2029, establishing smartphones as an integral part of modern life [4, 5].
Similarly, in Italy, smartphone users will grow steadily by 5.9 million users (+ 12.39%) between 2025 and 2029. The number of smartphone users is predicted to reach 53.5 million in 2029, marking a new record after 15 years of growth [6]. However, while smartphones offer many benefits, excessive use has been associated with a range of negative clinical, psychological, and social impacts [7]. Excessive smartphone use has been linked to mental health issues, such as elevated anxiety, depression, and emotional distress, according to several studies [8, 9]. Overuse of screens can disrupt good social relationships, which can result in feelings of social isolation, loneliness, and poor communication skills, particularly in younger people [10]. The addictive aspect of smartphone use has also been brought to light in recent years by research, with some findings indicating that excessive use is akin to behavioral addictions in that it reinforces compulsive behaviors that worsen psychological and social issues [11].
The WHO has focused on the possible health implications due to the excessive use of smartphones, and some researchers have suggested a possible new form of behavioral addiction [12].
Currently, there is no unanimous consensus on the definition of smartphone addiction (SA), and there are differing viewpoints regarding the nature of this behavior [13]. According to some authors, it is misleading to categorize excessive smartphone use as an addiction, as addiction is traditionally defined as a disorder with severe and long-lasting effects on physical and psychological health [14]. Although behaviors may resemble addictions in terms of excessive use, problems with control, and unfavorable outcomes, they are not always addictions [15]. Therefore, a recent review of the literature proposed the definition of "problematic

 https://doi.org/10.15167/2421-4248/jpmh2025.66.4.3771

use" referring to the behaviors regarding technological devices [16].

As a result, "problematic use of smartphones" (PSUD) is becoming a more common term to describe a persistent inability to regulate the addictive behavior that causes discomfort or functional damage [17]. The global spread of smartphones has raised concerns about their negative effects related to problematic use, especially in the younger population [18]. The use of smartphones and other digital devices for a variety of purposes, such as gambling, online gaming, and sexual activity, is on the rise [19]. These activities can all result in several behavioral issues [20]. In addition to causing psychological pain. Excessive participation in these activities can occasionally even lead to the emergence of other types of addiction, including an addiction to gambling or the internet [21]. This change in emphasis from substance-based addiction to behavior-based addiction calls into question long-held beliefs about dependency and poses significant issues regarding the definition and management of different types of addiction in the digital age [22].

Furthermore, behavioral addiction does not exhibit the outward manifestations of substance addiction. Behaviorally addicted people, according to others, exhibit specific signs and will experience the same outcomes as those who are addicted to drugs and alcohol and engage in other compulsive behaviors [19]. While the phenomenon of problematic smartphone use is globally recognized, there remains a paucity of research focused specifically on young adults in Italy, particularly in the southern regions. This study, therefore, aims to define the prevalence of this phenomenon in this specific demographic and to evaluate its association with socio-demographic variables, habits, and lifestyles, thereby providing crucial data for region-specific public health initiatives.

Excessive smartphone engagement is marked by varied terminology, including 'smartphone addiction' (SA), 'excessive use,' and 'problematic smartphone use' (PSU). While SA is a commonly used term, its classification as a true behavioral addiction remains debated, as some argue it lacks the severe, long-lasting effects of clinically defined addictions. 'Excessive use' is a descriptive term that may not necessarily imply negative consequences. Consequently, this paper will primarily adopt the term 'problematic smartphone use,' defined as a persistent inability to regulate usage, leading to significant discomfort or functional impairment. We will, however, use the term 'smartphone addiction' when referencing validated instruments like the Smartphone Addiction Scale (SAS) and in line with the existing literature for comparative purposes.

Given the rising prevalence of smartphone use and the associated risks, there is a need to quantify this phenomenon in specific contexts. While international data exists, there is a gap in the literature regarding young adults in Southern Italy. Therefore, the primary objective of this study is to determine the prevalence of smartphone addiction in a sample of young adults from Southern Italy. The secondary objectives are: 1) to identify the primary activities for which smartphones are used, 2) to explore the association between smartphone addiction and various socio-demographic and behavioral variables (*e.g.* gender, lifestyle habits), and 3) to profile the characteristics of individuals identified as having a smartphone addiction.

Material and Methods

The study follows a cross-sectional descriptive design. The study was conducted between March and June 2025 through the administration of an anonymous questionnaire elaborated partly *ad hoc* and partly by proposing the Smartphone addiction scale (SAS) [23] and the short version of the Smartphone addiction scale (SAS-SV) [24].

The *ad hoc* elaborated part contained questions regarding socio-economic factors, habits, and lifestyles, such as physical activity (yes/no), regular consumption of alcohol and coffee (yes/no), with particular attention to the type of use of the IT platforms and social networks and to the time spent daily on them. The *ad hoc* section of the questionnaire was developed by the research team based on a review of relevant literature on digital habits and lifestyle factors associated with problematic technology use. The questions were designed to gather data on socioeconomic factors, lifestyle habits (physical activity, substance use), and specific patterns of social media engagement. Prior to its distribution, the questionnaire was pilot-tested on a small sample of 20 university students to assess its clarity, comprehensibility, and time for completion. Feedback from the pilot phase was used to refine the wording of several questions to ensure they were unambiguous.

The SAS is a scale for smartphone addiction consisting of 6 factors (daily-life disturbance, positive anticipation, withdrawal, cyberspace-oriented relationship, overuse, and tolerance) and 33 items with a six-point Likert scale (1: ''strongly disagree'' and 6: ''strongly agree'') based on self-reporting. It is important to keep in mind that the cut-off score for the 33-item SAS varies across studies, reflecting different populations and methodologies. Therefore, we did not use this scale to define smartphone addiction: we investigated the presence of problematic use in our cohort mainly using a short version of the smartphone addiction scale (SAS-SV) [24], validated in adolescents and young adults [25], consisting of 10 items with a six-point Likert scale.

The questionnaire was distributed online through social networks and messaging apps (especially WhatsApp) and based on multiple-choice questions.

Study Population

Assuming an expected prevalence of smartphone addiction of 20%, the sample size was calculated using the standard formula for estimating a proportion in a large population:

$$n = \frac{Z^2 \cdot P \cdot (1-P)}{d^2}$$

where Z = 1.96 for a 95% confidence level, P is the expected prevalence (assumed at 20%, or 0.20), and d is the margin of error (5%, or 0.05). The calculation was performed using the software G*Power 3.1. %. Considering a target population of approximately 1,750,000 university students in Italy, the minimum required sample size was determined to be 247 participants. The target population consisted of young adults aged 18-40 residing in Italy, with recruitment efforts primarily focused on the southern regions, in particular Sicily and Calabria, through university and community networks.

Recruitment Method and Eligible Criteria

An anonymous questionnaire was administered to participants of both sexes, aged 18 to 40, who could understand Italian in order to provide informed consent and complete the survey. The questionnaire was delivered using the Computer-Assisted Web Interviewing (CAWI) method, allowing participants to self-complete it online. The questionnaire link was distributed via email and social networks to approximately 800 potential participants. A total of 465 responses were received (response rate: 58%). After excluding 14 incomplete questionnaires (where more than 10% of questions were unanswered), the final sample consisted of 451 participants.

All participants were informed about the confidentiality measures in place, and written informed consent was obtained in compliance with Italian privacy laws. The interviews were conducted in settings that ensured adequate privacy.

Data Analysis

Prior to analysis, the distribution of continuous variables, including the SAS and SAS-SV scores, was assessed for normality using the Shapiro-Wilk test. As the data did not follow a normal distribution, non-parametric tests were used for group comparisons where appropriate (Mann-Whitney U test for two groups, Kruskal-Wallis for more than two groups). The chi-square test was used for comparisons between categorical variables. Descriptive statistics are reported as means and standard deviations or medians and interquartile ranges, as appropriate. Where applicable, proportions are presented together with their 95% confidence intervals (CI) to provide a more precise estimate of the observed prevalence and associations.

The present analysis was exploratory and primarily bivariate in nature, allowing the identification of statistically significant associations between smartphone addiction scores and socio-demographic data (sex, professional profile, working sector, *etc.*), without modeling independent predictors.

All statistical analyses were performed using R software (rel. 4.2.0).

Results

Demographic, Socio-Economic, and Behavioral Factors

The questionnaire was filled in by 451 participants with an average age of 22.42 years (DS 3,97): 170 (38%) were males and 281 (62%) were females. Almost all the participants (n = 442, 98%) were Italian.

Most of them were single (n = 431,96%), non-working students (n = 413,92%) with an average income less than € 30.000 annually (n = 388,86%).

About three-quarters of them (n = 343,76%) engaged in physical activity, a similar percentage (n = 333,74%) habitually drank coffee, whereas only 17% (n = 76) regularly drank alcohol, and 27% (n = 123) were smokers.

Demographic, socio-economic, and behavioral factors are shown in Table I.

Almost half of the subjects (n = 219, 49%) declared to be quite satisfied with the interpersonal relationships of their life, 144 of them (32%) very satisfied, 45 (10%) a little, 16 (4%) not much, and 27 (6%) extremely.

Regarding the use of smartphones while driving, women replied 48% never *vs.* men 22%.

The activities for which smartphones were used are shown in Table II, and the time spent (in hours) on each social network and activity is shown in Table III.

As regards the habit of publishing stories on Instagram, Facebook and WhatsApp, and if yes, why, about a quarter of the sample (n = 106, 24%) replied never, the majority (n = 275, 61%) declared to do it because they liked to show what they do. The motivations reported by the remaining part are very variable, from the desire to emulate others (3%) to the need to fight boredom (0,9%).

Smartphone Addiction Scale (SAS)

According to the results of the SAS administration, the average score was 86.94 ± 22.71, although the mean score in the female sample was higher (87.61 ± 22.74).

We used SAS to investigate the presence of statistical associations between smartphone use and other variables (see Table III for all *p*-values). The gender was associated with a more rational use of smartphones in males; besides, men used smartphones for gaming more than women, and had more difficulty concentrating or problems related to sleeping. However, they used more video gaming and had a higher use while driving; on the other hand, women were more aware of the problematic use. In addition, students had an overuse of smartphones, and they had them in mind even when they were not using them.

The item-by-item analysis of the SAS, detailed in Table IV, revealed several statistically significant associations between socio-demographic variables and specific smartphone use behaviors. Specifically, respondents from the Sicilian region showed a significant association with items related to feeling calm and cozy while using a smartphone and having more fun with it compared to other activities ($p < 0.05$). Regarding educational level, undergraduate interviewees were more likely to report feeling pleasant or excited and confident while using their device ($p < 0.01$). Finally, income level was associated with specific items: those with higher incomes were more likely to have their

Tab. I. Distribution of demographic and socio-economic factors.

N		All (n = 451; 100%)		Male (n = 170; 38%)		Female (n = 281; 62%)	
		%	N	%	N	%	
Nationality	**Italian**	442	98	163	96	279	99
	Other	9	2	7	4	2	1
Marital status	**not married**	431	96	160	94	271	96
	married	20	4	10	6	10	4
Work	**No**	413	92	146	86	267	95
	Yes	38	8	24	14	14	5
Income	**< 25.000**	192	43	75	44	117	42
	25.000-30.000	196	43	67	39	129	46
	> 30.000	63	14	28	16	35	12
Cohabitation	**No**	27	6	10	6	17	6
	with family	310	69	115	68	195	69
	with others	114	25	45	26	69	25
Physical activity	**No**	108	24	27	16	81	29
	Yes	343	76	143	84	200	71
Coffee consumption	**No**	118	26	43	25	75	27
	Yes	333	74	127	75	206	73
Alcohol consumption	**No**	375	83	129	76	246	88
	Yes	76	17	41	24	35	12
Smoke	**No**	328	73	110	65	218	78
	Yes	123	27	60	35	63	22
Electronic cigarette	**No**	423	94	151	89	272	97
	Yes	28	6	19	11	9	3

Tab. II. Answers to the question "For which activity do you use your smartphone?" (data in percentages).

Category	Female (% / N)	Male (% / N)	Total
Text messaging	62.9% (61)	37.1% (36)	97
Phone calls	61.3% (57)	38.7% (36)	93
Studying	65.4% (51)	35.9% (28)	78
Games	48.8% (20)	53.7% (22)	41
Working	38.1% (8)	61.9% (13)	21
Entertainment	57.9% (33)	40.4% (23)	57
Web surfing	46.9% (15)	53.1% (17)	32
Social network	61.9% (52)	38.1% (32)	84
Photo and video	63.5% (54)	36.5% (31)	85
Reading	61.9% (26)	38.1% (16)	42
Useful apps	59.7% (37)	40.3% (25)	62
Shopping	60.0% (30)	40.0% (20)	50
Others	63.6% (7)	36.4% (4)	11

smartphone in mind even when not using it and to not give it up despite negative effects on their daily life ($p < 0.05$).

We also evaluated the association between higher scores and the investigated variables, and we found a higher score in subjects with a higher use of smartphones, especially while driving, and the presence of symptoms such as difficulty concentrating and wrist pain ($p < 0.001$). Furthermore, they thought more of their smartphone even when they did not use it, and they felt that relationships with digital friends are much more intimate than relationships with their real-life friends ($p < 0.001$).

Short version of Smartphone Addiction Scale (SAS-SV)

The answers relating to the SAS-SV are shown in Table V. According to the results of the SAS-SV administration, the average score was 26.4 ± 1.72.

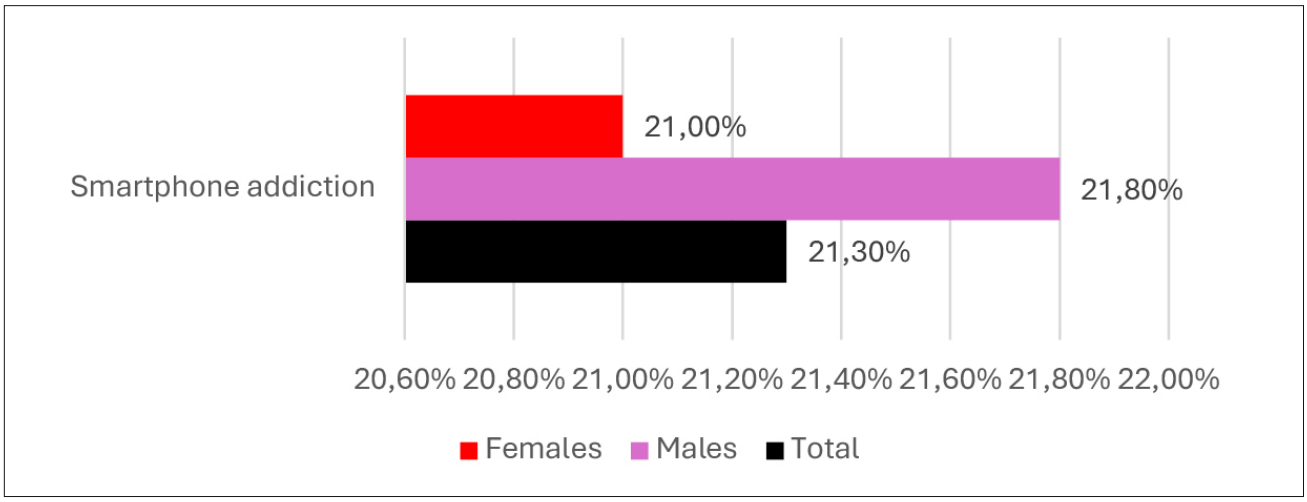
A cut-off score of 31 for males and 33 for females for smartphone dependency was established, as suggested in the literature [24].

Using the SAS-SV cut-offs, the overall prevalence of smartphone addiction was 21.3% (95% CI: 17.6-25.4), with comparable proportions observed among males (21.8%; 95% CI: 15.9-28.8) and females (21.0%; 95% CI: 16.5-26.2) (Fig. 1).

Tab. III. Time spent by our sample using specific apps or devices.

Apps	Never		1-2 hours/day		2-4 hours /day		4-6 hours /day		Always	
	N	%	N	%	N	%	N	%	N	%
WhatsApp	0	0	121	30,6	124	27,5	62	13,7	144	31,9
Instagram	44	9,8	138	30,6	132	29,3	71	15,7	66	14,6
Facebook	128	28,4	226	50,1	58	12,9	27	6,0	12	2,7
Twitter	435	96,5	12	2,7	2	0,4	2	0,4	0	0,0
Messenger	361	80,7	75	16,6	6	1,3	4	0,9	2	0,4
Skype	433	96,0	12	2,7	2	0,4	2	0,4	4	0,4
Tinder	446	98,9	2	0,4	1	0,2	2	0,4	0	0,0
Messaging app	361	80,0	69	15,3	13	2,9	4	0,9	4	0,9
Wikipedia	153	33,9	221	49,0	55	12,2	13	2,9	9	2,0
Youtube	93	20,6	237	52,5	80	17,7	24	5,3	17	3,8
Netflix	189	41,9	155	34,4	75	16,6	23	5,1	9	2,0
Spotify	201	44,6	127	28,2	67	14,9	36	8,0	20	4,4
App for Music	218	48,3	145	32,2	53	11,8	22	4,9	13	2,9
App for Game	278	61,6	130	28,8	28	6,2	12	2,7	3	0,7
Other	350	77,6	82	18,2	14	3,1	4	0,9	1	0,2
Devices	**Never**		**1-2 hours /day**		**2-4 hours /day**		**4-6 hours /day**		**Always**	
	N	%	N	%	N	%	N	%	N	%
Smartphone	0	0	53	11,8	124	27,5	100	22,2	174	38,3
PC	96	21,3	198	43,9	109	24,2	28	6,2	20	4,4
SmartTv	239	53,0	147	32,6	50	11,1	9	2,0	6	1,3
Tablet	361	80,0	68	15,1	13	2,9	4	0,9	5	1,1
Fixed console	373	82,7	59	13,1	15	3,3	2	0,4	2	0,4
Mobile console	424	94,0	19	4,2	7	1,6	1	0,2	0	0,0
E-reader	416	92,2	26	5,8	7	1,6	0	0,0	2	0,4

Fig. 1. Percentages of the sample with smartphone addiction using the SAS-SV score (M > 31, F > 33) by gender.



The subgroup of participants classified as addicted (n = 96) had a mean age of 22.1 years (SD 3.25). Their sociodemographic and lifestyle characteristics were largely comparable to those of the overall sample, with most being unmarried (96.9%), non-working students (90.6%), and with an annual income below € 30,000 (93.8%). Similarly, the prevalence of physical activity (74%), coffee consumption (71.9%), alcohol consumption (19.8%), and smoking (27.1%) mirrored the distributions observed in the total population (Tab. VI).

Discussion

This study considered the lifestyle and behavioral characteristics of the sample to assess the level of smartphone addiction, correlating it with the time spent online and in various apps. In our methodological

Tab. IV. SAS 33-items *p* value by gender, region of provenience, educational degree, and income (significant *p* values are reported in bold).

	SAS items	Gender	Region of provenience	Educational degree	Income
1	Missing planned work due to smartphones	0.291	0.190	0.597	0.269
2	Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use	***0.002**	***0.067**	0.432	0.875
3	Experiencing lightheadedness or blurred vision due to excessive smartphone use	0.130	0.147	0.787	0.156
4	Feeling pain in the wrists or at the back of the neck while using a smartphone	0.22	0.196	0.199	0.649
5	Feeling tired and lacking adequate sleep due to excessive smartphone use	0.14	0.161	0.309	0.161
6	Feeling calm or cozy while using a smartphone	0.470	***0.003**	0.671	0.565
7	Feeling pleasant or excited while using a smartphone	***0.021**	***0.009**	***0.002**	0.799
8	Feeling confident while using a smartphone	0.706	***0.038**	***0.004**	0.694
9	Being able to get rid of stress with a smartphone	0.971	***0.017**	0.991	0.424
10	There is nothing more fun to do than using my smartphone	0.526	***0.001**	***0.001**	0.060
11	My life would be empty without my smartphone	0.354	0.485	0.750	0.488
12	Feeling most liberal while using a smartphone	0.282	***0.006**	0.051	0.389
13	Using a smartphone is the most fun thing to do	0.580	0.774	0.212	0.275
14	Won't be able to stand not having a smartphone	0.282	0.967	0.402	0.509
15	Feeling impatient and fretful when I am not holding my smartphone	0.108	0.301	0.744	0.788
16	Having my smartphone in my mind even when I am not using it	***0.038**	0.324	0.676	***0.001**
17	I will never give up using my smartphone even when my daily life is already greatly affected by it	0.993	0.660	0.939	***0.038**
18	Getting irritated when bothered while using my smartphone	0.253	0.078	0.783	0.630
19	Bringing my smartphone to the toilet even when I am in a hurry to get there	0.097	***0.043**	0.295	0.601
20	Feeling great meeting more people via smartphone use	0.079	***0.003**	***0.001**	0.961
21	Feeling that my relationships with my smartphone buddies are more intimate than my relationships with my real-life friends	0.897	***0.040**	0.130	0.460
22	Not being able to use my smartphone would be as painful as losing a friend	0.249	***0.037**	0.288	0.589
23	Feeling that my smartphone buddies understand better than my real-life friends	***0.012**	0.055	0.354	0.525
24	Constantly checking my smartphone so as not to miss conversations between other people on Twitter or Facebook	0.131	0.125	0.456	0.796
25	Checking SNS (Social Networking Service) sites like Twitter or Facebook right after waking up	0.592	***0.011**	0.132	0.791
26	Preferring talking with my smartphone buddies to hanging out with my real-life friends or with the other members of my family	0.079	***0.001**	***0.001**	0.061
27	Preferring searching from my smartphone to asking other people	0.875	0.060	0.767	0.705
28	My fully charged battery does not last for one whole day.	0.475	0.089	0.499	0.144
29	Using my smartphone longer than I had intended	0.480	0.064	0.886	0.794
30	Feeling the urge to use my smartphone again right after I stopped using it	0.267	***0.001**	***0.002**	0.715
31	Having tried time and again to shorten my smartphone use time, but failing all the time	***0.021**	0.050	0.465	0.165
32	Always thinking that I should shorten my smartphone use time	***0.002**	0.055	***0.010**	0.584
33	The people around me tell me that I use my smartphone too much	0.905	0.809	0.858	0.344

* Significative *p* value

approach, we utilized both the full Smartphone Addiction Scale (SAS) and its short version (SAS-SV), each serving a distinct purpose. The full 33-item SAS was employed as an exploratory tool to identify statistical associations between specific smartphone-related behaviors and sociodemographic variables, with the significant findings detailed in Table III. However, for the primary objective of classifying addiction and determining prevalence, we relied on the SAS-SV. This choice was deliberate, as the SAS-SV provides validated, gender-specific cut-off scores for young adults, offering a more robust and standardized method

Tab. V. Short version of the Smartphone addiction scale (SAS-SV).

	SAS-SV items		Strongly disagree		Disagree		Weakly disagree		Weakly agree		Agree		Strongly Agree	
			N	%	N	%	N	%	N	%	N	%	N	%
1	Missed planned work due to smartphone use	**Male**	51	11	36	8	42	9	28	6	7	2	6	1
		Female	73	16	48	11	91	20	53	12	12	3	4	1
2	Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use	**Male**	43	10	23	5	31	7	46	10	16	4	11	2
		Female	45	10	50	11	84	19	76	17	21	5	5	1
3	Feeling pain in the wrists or at the back of the neck while using a smartphone	**Male**	67	15	33	7	37	8	28	6	3	1	2	0
		Female	94	21	30	7	84	19	53	12	13	3	7	2
4	Will not be able to stand not having a smartphone	**Male**	54	12	24	5	42	9	38	8	10	2	2	0
		Female	63	14	55	12	67	15	71	16	20	4	5	1
5	Feeling impatient and fretful when I am not holding my smartphone	**Male**	56	12	29	6%	55	12	22	5	3	1	5	1
		Female	76	17	45	10	86	19	58	13	12	3	3	1
6	Having my smartphone in mind even when I am not using it	**Male**	90	20	24	5	41	9	14	3	1	0	0	0
		Female	112	25	40	9	95	21	26	6	8	2	0	0
7	I will never give up using my smartphone, even when my daily life is already greatly affected by it	**Male**	49	11	28	6	44	10	36	8	9	2	4	1
		Female	76	17	44	10	79	18	59	13	17	4	6	1
8	Constantly checking my smartphone so as not to miss conversations between other people on Twitter or Facebook	**Male**	72	16	37	8	32	7	26	6	2	0	1	0
		Female	144	32	40	9	63	14	28	6	4	1	2	0
9	Using my smartphone longer than I had intended	**Male**	15	3	13	3	31	7	70	16	22	5	9	2
		Female	16	4	17	4	63	14	117	26	45	10	23	5
10	The people around me tell me that I use my smartphone too much	**Male**	62	14	22	5	41	9	31	7	9	2	5	1
		Female	93	21	38	8	81	18	46	10	16	4	7	2

* Percentages are calculated on the total of the sample.

for classification than the full SAS, for which cut-offs can vary significantly across studies.

Most of the sample used smartphones for media and basic communication. The degree to which people reported experiencing pleasure or excitement from using smartphones seems to be significantly influenced by the degree of education and the region of provenance. This may suggest that people's perceptions and enjoyment of smartphone interactions may be influenced by specific study settings or cultural/regional considerations [26]. Investigating how various factors, such as regional cultural variations, affect people's emotional reactions to smartphones can be worthwhile [27, 28].

Men and women may have different opinions on how their online friends comprehend them in comparison to their real-life friends. This implies that gender might influence how people establish and perceive relationships online, perhaps reflecting varying social behaviors or emotional commitments to virtual *vs.* face-to-face interactions [29-31]. Interestingly, the approaches that men and women use smartphones differ in a few significant ways: regarding web browsing, men are marginally more likely to use smartphones than women (17% M *vs.* 15% F); as concerns using smartphones for work, men are more likely than women (13% M *vs.* 8% F); finally, there is a slight but noticeable difference in the use of smartphones for gaming (22% men *vs.* 20% women).

Regarding smartphone use, according to the findings, all of the sample members use smartphones every day, implying that the majority of the sample population considers them to be an essential component of their everyday lives [32].

The survey also looked at using smartphones while driving and found some alarming trends: a startling 2% of respondents said they always used their smartphones while driving, while 23% said they used them infrequently [33]. According to SAS-SV score, 21.3% of our sample met criteria for smartphone addiction: a slightly higher result than of a study carried out in Switzerland in 2015 in which smartphone addiction occurred in 16.9% of young adults, revealing that this phenomenon was more prevalent in young adolescents (15-16 years) compared with young adults (19 years and older), in people reporting lower physical activity, and that alcohol and tobacco consumption were unrelated to smartphone addiction [34]. The prevalence of smartphone addiction in our sample, identified at 21.3%, warrants significant attention due to its potential clinical and functional implications. This finding suggests that more than one in five young adults in Southern Italy may be at an increased risk for negative mental health outcomes, such as elevated anxiety, depression, and sleep disturbances, which are consistently linked to problematic smartphone use. Furthermore, this level of prevalence could translate into tangible functional impairments, including difficulty concentrating in academic or work settings, a concern reported by our participants. In the socio-cultural context of Southern Italy, where strong interpersonal and family bonds are traditionally central, the risk of

Tab. VI. Sociodemographic and lifestyle characteristics of participants classified as addicted according to the SAS-SV.

N		All (n = 96; 100%)		Male (n = 37; 38,5%)		Female (n = 59; 61,5%)	
		%	N	%	N	%	
Marital status	**Not married**	93	96,9	34	91,9	59	100
	Married	3	3,1	3	8,1	0	0
Work	**No**	87	90,6	31	83,8	56	94,9
	Yes	9	9,4	6	16,2	3	5,1
Income	**< 25.000**	42	43,8	20	54	22	37,3
	25.000-30.000	48	50	14	37,8	34	57,6
	> 30.000	6	6,2	3	8,2	3	5,1
Cohabitation	**No**	8	8,3	3	8,2	5	8,5
	with family	72	75	28	75,7	44	74,6
	with others	16	16,7	6	16,1	10	16,9
Physical activity	**No**	25	26	5	13,5	20	33,9
	Yes	71	74	32	86,5	39	66,1
Coffee consumption	**No**	27	28,1	11	29,7	16	27,1
	Yes	69	71,9	26	70,3	43	72,9
Alcohol consumption	**No**	77	80,2	24	64,9	53	89,8
	Yes	19	19,8	13	35,1	6	10,1
Smoke	**No**	70	72,9	20	54	50	84,7
	Yes	26	27,1	17	46	9	15,3
Electronic cigarette	**No**	90	93,8	32	86,5	58	98,3
	Yes	6	6,2	5	13,5	1	1,7

developing cyberspace-oriented relationships at the expense of real-life interactions could have unique consequences, potentially exacerbating feelings of social isolation despite heightened digital connectivity. As our results showed, the sociodemographic and lifestyle characteristics of the addicted subgroup were broadly comparable to those of the overall sample. This lack of marked differences suggests that problematic smartphone use in our cohort cuts across typical demographic and behavioral profiles, rather than being confined to specific risk groups. Such a finding underlines the pervasiveness of this phenomenon among young adults and highlights the need for broad-based preventive strategies rather than interventions targeting only particular subpopulations.

Moreover, our findings indicate that patterns of smartphone use and vulnerability to problematic use differ according to sociodemographic characteristics. Similar studies have reported that while smartphone addiction may not be consistently associated with family income or parental education, variations in usage patterns and perceived dependence across gender and educational levels are frequently observed [24, 35, 36].

In this context, the present findings are consistent with and extend previous Italian research on problematic smartphone use across different population groups. In particular, the gender-related patterns in smartphone engagement and perceived dependence observed in our study align with those reported by Cali et al., who identified a higher prevalence of smartphone addiction among adolescents in Southern Italy, especially among females, suggesting that gender differences may emerge early and persist into young adulthood [37].

Similar results were reported by Caponnetto et al. during the COVID-19 lockdown in Italy, where younger individuals – especially females – exhibited higher levels of smartphone dependency, highlighting the role of contextual stressors and increased reliance on digital communication in amplifying problematic use [38].

Although conducted in a different population, the study by Vitale and Mea on Italian nurses provides additional comparative insight. Their findings demonstrated significant associations between smartphone addiction and lifestyle-related variables such as Body Mass Index, physical inactivity, and work experience, reinforcing the interpretation that problematic smartphone use is closely intertwined with broader health and behavioral patterns rather than being an isolated phenomenon [39].

Taken together, these studies support the interpretation that smartphone addiction represents a transversal public health issue in Italy, affecting adolescents, young adults, and working populations alike, and influenced by a complex interaction of individual, social, and contextual factors.

In our study, personal computers are the second most used devices (21.3% never use them). In particular, we did not find a specific computer addiction, keeping in mind that there are several forms of internet addiction and that diagnosing addictions is difficult [40-45].

A key implication of our findings is that the problematic behavior may be less about the smartphone as a device and more about the applications it hosts. The high reported usage of social media platforms like Instagram and messaging apps like WhatsApp points towards the underlying mechanisms of behavioral addiction. These platforms are engineered with features such as variable intermittent reinforcement (*e.g.* unpredictable

notifications, likes, and messages) and the constant opportunity for social validation, which are known to trigger compulsive checking and engagement. Therefore, the 'addiction' is likely to the social connection and validation these apps provide, with the smartphone simply being the ever-present vehicle for this reinforcement loop; in our sample, the reasons pushing to public stories or updates on Instagram, Facebook or WhatsApp are pleasure of sharing (61%), emulating the others (3%), need to public what they are doing because otherwise it is as if it never happened (2%), boredom (0.9%). Moreover, in our sample, the 7% considers it as something to do occasionally, only 4% shares only outstanding episodes of their own life or nothing personal, but it uses them as a political and cultural tool of propaganda.

Besides, most of our sample uses smartphones for longer than planned: despite prolonged use of the devices, no significant statistics were found regarding productivity ("I can't do a scheduled job due to using my smartphone") and physical symptoms (blurry vision, wrist, neck or back pain, sleep alteration) although in some cases it does affect the work sphere, the concentration, and the cognitive and social sphere and, as further highlighted in recent literature, found that the most common complaints were involving dry eyes, decreased vision, and cervical pain [46, 47]. Further reinforcing the severity of these clinical implications is a recent and large cohort study by Xiao et al., which analyzed the trajectories of habitual screen use in a cohort of 4,285 young Americans. The study highlighted a crucial point, perfectly in line with our hypothesis: it is not the total time spent in front of the screen that predicts negative outcomes for mental health, but rather the pattern of habitual use over time [48]. In addition to these serious psychological consequences, other research has also highlighted the implications for physical health. A cross-sectional study by Nagata et al. (2023), using data from the same cohort of adolescents, examined the association between screen usage time, physical activity (measured in steps), and Body Mass Index (BMI). The most notable finding was that, although low physical activity and high screen time were both associated with a greater risk of overweight and obesity, high physical activity was not able to fully compensate for the risks associated with high screen usage time [49].

Usage Patterns and Behaviors

The study's findings also illuminate the usage patterns and behaviors of young adults in Southern Italy. The primary functions of smartphones within this cohort are for leisure, social media, and entertainment. High levels of engagement were observed with popular applications; for instance, 73.2% of participants reported using WhatsApp for two or more hours daily, while 59.6% reported the same duration of use for Instagram. The motivation for this engagement appears to be rooted in social sharing, as a majority of the sample (61%) stated they post on social media because they enjoy displaying their activities.

An exploratory analysis utilizing the 33-item Smartphone Addiction Scale (SAS) indicated that high usage levels are associated with problematic behavioral patterns, with statistically significant correlations found within specific demographic cohorts. The student cohort, for example, demonstrated a heightened self-awareness of their extensive use, exhibiting a greater tendency to believe they should reduce their smartphone time compared to non-students ($p < 0.01$). Socioeconomic status emerged as another significant variable. Individuals with higher incomes reported a greater cognitive preoccupation with their devices, being more likely to have their smartphone in mind even when not actively using it ($p < 0.001$). This group also demonstrated more resistance to altering their habits, indicating they would not give up their smartphone even if it negatively affected their daily life ($p < 0.038$). Statistically significant gender-based differences were also identified. Males reported a higher incidence of concentration difficulties in academic or work settings due to smartphone use ($p < 0.002$). In contrast, females exhibited greater cognizance of their usage patterns, being more likely to contemplate reducing their screen time and to have made unsuccessful attempts to do so ($p < 0.002$ and $p < 0.021$, respectively).

Implications for prevention and public health

From a preventive perspective, our findings support the adoption of both individual- and system-level strategies to mitigate problematic smartphone use. At the individual level, simple behavioral interventions – such as disabling non-essential notifications, setting time limits for social media use, and creating "tech-free" times and spaces (*e.g.* during meals or before bedtime) – may help reduce compulsive checking behaviors. The use of control applications, such as Forest or similar digital well-being tools, may further support self-regulation by limiting access to the most time-consuming applications.

At the family and educational levels, establishing clear rules, promoting positive role modeling (particularly for younger users), and encouraging offline alternatives – including sports, reading, and creative hobbies – are crucial protective factors. Smartphones should be promoted as tools that serve functional purposes rather than dominant drivers of daily behavior. Importantly, the introduction of structured educational programs in middle and high schools focusing on the conscious use of technology, digital literacy, coding, and robotics may foster healthier relationships with digital devices. Such programs should be integrated into broader health education curricula and supported by partnerships between families, schools, healthcare providers, and public institutions to ensure a coordinated and sustainable approach.

From a regulatory perspective, international policy initiatives highlight growing concern regarding excessive smartphone and social media use among minors. Australia has recently introduced legislation restricting access to certain social media platforms – such

as TikTok, Instagram, and YouTube – for individuals under 16 years of age, while similar measures are under discussion or partial implementation in countries including Denmark and the United States [50].
In Italy, increasing attention has been directed toward restricting smartphone use in high schools, particularly during teaching hours [51]. These measures aim to reduce distractions, improve academic performance, and safeguard students' mental and physical health. Although our study focused on young adults, the observed prevalence of problematic smartphone use supports the rationale for such policies and underscores the importance of early preventive action before maladaptive usage patterns become consolidated.

Limitations of the study

Several limitations should be acknowledged. First, the age range of the participants represents a key limitation, as the sample consisted primarily of young adults; future research should extend to middle and high school students, who may be particularly vulnerable to developing problematic smartphone use. Second, the cross-sectional design precludes causal inference. Third, the reliance on self-reported data may have introduced recall and social desirability biases. Fourth, although pilot-tested, the ad hoc section of the questionnaire lacked formal psychometric validation. Fifth, the statistical approach was predominantly bivariate and exploratory. While suitable for identifying associations, it does not allow the identification of independent risk factors. Future studies should employ multivariate techniques, such as logistic regression, to better isolate predictors of smartphone addiction.
Finally, the recruitment strategy, based largely on online dissemination, may have resulted in selection bias and an overrepresentation of females, potentially limiting the generalizability of the findings.

Conclusion

The findings of this study indicate that smartphones have become central to the daily lives of young adults, primarily for leisure activities such as social media, gaming, and entertainment. This trend has been accentuated in the post-pandemic context, where social distancing and lockdown measures increased reliance on digital communication, fostering habitual and, in some cases, compulsive usage patterns [48]. While daily engagement with smartphones is widespread, it is important to distinguish between normalized, frequent use and behaviors that meet criteria for addiction, particularly when such use interferes with safety, well-being, or daily functioning.
Our analysis suggests that problematic smartphone use is closely tied to social media platforms, whose design features encourage continuous engagement and provide immediate social reinforcement [49, 52]. Compulsive use is not evenly distributed across the population; age, gender, education, and socioeconomic status appear to influence both the frequency of use and the potential for developing maladaptive behaviors [53]. These insights highlight that interventions should be sensitive to contextual and demographic factors rather than assuming uniform risk across all users.
The implications for prevention and management are clear. Universities and educational institutions should adopt broad-based digital literacy initiatives that teach mindful technology use and critical awareness of app design. Early screening and targeted counseling within mental health services can help identify at-risk individuals before problematic behaviors escalate [54-60]. Public health campaigns should emphasize the quality of digital engagement rather than mere screen time, encouraging the maintenance of real-life social connections alongside digital interaction [61-68].
In conclusion, problematic smartphone use affects a substantial proportion of young adults in Southern Italy and appears to be driven more by the design and functionality of social media applications than by screen time alone. These findings reinforce the need for early, coordinated prevention strategies that integrate behavioral interventions, educational programs, and policy measures.
Addressing smartphone addiction requires a multi-level approach involving individuals, families, schools, healthcare systems, and institutions. Promoting conscious and purposeful technology use – while preserving the benefits of digital innovation – represents a key public health challenge for the coming years.

Funding

This research received no external funding.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest Statement

The authors declare no conflict of interest.

Authors' contribution

RV, CER, VLF, CG: Conceptualization; GT, VLF: RV, CER, RS, VLF, CG: Methodology; GT, VLF, CG: Formal analysis; RV, CER, GLS, VLF, CG: Investigation; RV, CER, GG, CG: Resources; GT, VLF: Data Curation;

RV, CER, CG: Writing-original draft; RS, VLF, CG: Writing-review and editing; RS, VLF, CG: Supervision.

References

[1] Firth J, Torous J, Stubbs B, Firth JA, Steiner GZ, Smith L, Alvarez-Jimenez M, Gleeson J, Vancampfort D, Armitage CJ, Sarris J. The "online brain": how the Internet may be changing our cognition. World Psychiatry 2019;18:119-29. https://doi.org/10.1002/wps.20617.

[2] Dienlin T, Johannes N. The impact of digital technology use on adolescent well-being. Dialogues Clin Neurosci 2020;22:135-42. https://doi.org/10.31887/DCNS.2020.22.2/tdienlin.

[3] Chang CW, Chang SH. The Impact of Digital Disruption: Influences of Digital Media and Social Networks on Forming Digital Natives' Attitude. Sage Open 2023;13:21582440231. https://doi.org/10.1177/21582440231191741.

[4] Adamczewska-Chmiel K, Dudzic K, Chmiela T, Gorzkowska A. Smartphones, the Epidemic of the 21st Century: A Possible Source of Addictions and Neuropsychiatric Consequences. Int J Environ Res Public Health 2022;19:5152. https://doi.org/10.3390/ijerph19095152.

[5] Degenhard J. Number of smartphone users worldwide 2014-2029. Available at: https://www.statista.com/forecasts/1143723/smartphone-users-in-the-world. Accessed on: 18/10/2025.

[6] Degenhard J. Number of smartphone users in Italy 2014-2029. Available at: https://www.statista.com/forecasts/1146077/smartphone-users-in-italy. Accessed on: 18/10/2025.

[7] Khan A, McLeod G, Hidajat T, Edwards EJ. Excessive Smartphone Use is Associated with Depression, Anxiety, Stress, and Sleep Quality of Australian Adults. J Med Syst 2023;47:109. https://doi.org/10.1007/s10916-023-02005-3.

[8] Wacks Y, Weinstein AM. Excessive Smartphone Use Is Associated With Health Problems in Adolescents and Young Adults. Front Psychiatry 2021;12:669042. https://doi.org/10.3389/fpsyt.2021.669042.

[9] Sarhan AL. The relationship of smartphone addiction with depression, anxiety, and stress among medical students. SAGE Open Medicine 2024;12:20503121241227367. https://doi.org/10.1177/20503121241227367.

[10] Bonsaksen T, Ruffolo M, Price D, Leung J, Thygesen H, Lamph G, Kabelenga I, Geirdal AØ. Associations between social media use and loneliness in a cross-national population: do motives for social media use matter? Health Psychol Behav Med 2023;11:2158089. https://doi.org/10.1080/21642850.2022.2158089.

[11] Abuhamdah, S.A., Naser, A.Y. Smartphone addiction and its mental health risks among university students in Jordan: a cross-sectional study. BMC Psychiatry 2023;23:812. https://doi.org/10.1186/s12888-023-05322-6.

[12] World Health Organization. Are our smart phones affecting our mental health? https://www.who.int/hongkongchina/news/detail/28-03-2018-are-our-smart-phones-affecting-our-mental-health-. Accessed on: 07/11/2024.

[13] Loleska S, Pop-Jordanova N. Is Smartphone Addiction in the Younger Population a Public Health Problem? Pril (Makedon Akad Nauk Umet Odd Med Nauki) 2021;42:29-36. https://doi.org/10.2478/prilozi-2021-0032.

[14] Panova T, Carbonell X. Is smartphone addiction really an addiction? J Behav Addict 2018;7:252-59. https://doi.org/10.1556/2006.7.2018.49.

[15] Hartogsohn I, Vudka A. Technology and addiction: What drugs can teach us about digital media. Transcult Psychiatry 2023;60:651-61. https://doi.org/10.1177/13634615221105116.

[16] Harris B, Regan T, Schueler J, Fields SA. Problematic Mobile Phone and Smartphone Use Scales: A Systematic Review. Front Psychol 2020;11:672. https://doi.org/10.3389/fpsyg.2020.00672.

[17] Nawaz S, Bhowmik J, Linden T, Mitchell M. Validation of a modified problematic use of mobile phones scale to examine problematic smartphone use and dependence. Heliyon 2024;10:e24832. https://doi.org/10.1016/j.heliyon.2024.e24832.

[18] Genovese C, Rizzo CE, La Spina I, Tripodi P, Biondo AC, Lo Prete V, Genovese MPA, Balsamo DG, Cipriano G, Genovese G, Nicita A, La Spada G, La Fauci V, Squeri R. A Southern addiction evaluation project: investigating the impact of addiction through a survey HBSC based. Clin Ter 2024;175:144-52. https://doi.org/10.7417/CT.2024.5047.

[19] Alavi SS, Ferdosi M, Jannatifard F, Eslami M, Alaghemandan H, Setare M. Behavioral Addiction versus Substance Addiction: Correspondence of Psychiatric and Psychological Views. Int J Prev Med 2012;3:290-4.

[20] Chung S, Lee HK. Public Health Approach to Problems Related to Excessive and Addictive Use of the Internet and Digital Media. Curr Addict Rep 2023;10:69-76. https://doi.org/10.1007/s40429-022-00458-z.

[21] Yau YH, Potenza MN. Gambling disorder and other behavioral addictions: recognition and treatment. Harv Rev Psychiatry 2015;23:134-46. https://doi.org/10.1097/HRP.0000000000000051.

[22] Throuvala MA, Griffiths MD, Rennoldson M, Kuss DJ. School-based Prevention for Adolescent Internet Addiction: Prevention is the Key. A Systematic Literature Review. Curr Neuropharmacol 2019;17:507-25. https://doi.org/10.2174/1570159X16666180813153806.

[23] Kwon M, Lee JY, Won WY, Park JW, Min JA, Hahn C, Gu X, Choi JH, Kim DJ. Development and validation of a smartphone addiction scale (SAS). PLoS One 2013;8:e56936. https://doi.org/10.1371/journal.pone.0056936.

[24] Kwon M, Kim DJ, Cho H, Yang S. The smartphone addiction scale: development and validation of a short version for adolescents. PLoS One 2013;8:e83558. https://doi.org/10.1371/journal.pone.0083558.

[25] De Pasquale C, Sciacca F, Hichy, Z. Italian Validation of Smartphone Addiction Scale Short Version for Adolescents and Young Adults (SAS-SV). Psychology 2017;8:1513-8. https://doi.org/10.4236/psych.2017.810100.

[26] Bai H, Liu J, Bai W, Cao T. Social pressures and their impact on smartphone use stickiness and use habit among adolescents. Heliyon 2024;10:e29111. https://doi.org/10.1016/j.heliyon.2024.e29111.

[27] Harari GM, Lane ND, Wang R, Crosier BS, Campbell AT, Gosling SD. Using Smartphones to Collect Behavioral Data in Psychological Science: Opportunities, Practical Considerations, and Challenges. Perspect Psychol Sci 2016;11:838-54. https://doi.org/10.1177/1745691616650285.

[28] Wang JC, Hsieh CY, Kung SH. The impact of smartphone use on learning effectiveness: A case study of primary school students. Educ Inf Technol (Dordr) 2023;28:6287-320. https://doi.org/10.1007/s10639-022-11430-9.

[29] Feng R, Ivanov A. Gender Differences in Emotional Valence and Social Media Content Engagement Behaviors in Pandemic Diaries: An Analysis Based on Microblog Texts. Behav Sci (Basel) 2022;13:34. https://doi.org/10.3390/bs13010034.

[30] La Fauci V, Venuto R, Genovese C, Squeri R, La Spada G, Pappalardo R, Alessi V. Study-related stress, perceived stress and quality of life among healthcare university students. Clin Ter 2023;174:412-9. https://doi.org/10.7417/CT.2023.2458.

[31] Fernández C, Vicente MA, Carrillo I, Guilabert M, Mira JJ. Factors Influencing the Smartphone Usage Behavior of Pedestrians: Observational Study on "Spanish Smombies". J Med Internet Res 2020;22:e19350. https://doi.org/10.2196/19350.

[32] Claesdotter-Knutsson E, André F, Fridh M, Delfin C, Hakansson A, Lindström M. Gender-Based Differences and Associated Factors Surrounding Excessive Smartphone Use Among Adolescents: Cross-sectional Study. JMIR Pediatr Parent 2021;4:e30889. https://doi.org/10.2196/30889.

[33] Ortega CAC, Mariscal MA, Boulagouas W, Herrera S, Espinosa JM, García-Herrero S. Effects of Mobile Phone Use on Driving Performance: An Experimental Study of Workload and Traffic Violations. Int J Environ Res Public Health 2021;18:7101. https://doi.org/10.3390/ijerph18137101.

[34] Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerland. J Behav Addict 2015;4:299-307. https://doi.org/10.1556/2006.4.2015.037.

[35] Chung N. Korean adolescent girls additive use of mobile phones to maintain interpersonal solidarity. SBP Journal 2011;39:1349-58. https://doi.org/10.2224/sbp.2011.39.10.1349.

[36] Saliceti F. Internet Addiction Disorder (IAD). Procedia Soc Behav Sci 2015;191:1372-6. https://doi.org/10.1016/j.sbspro.2015.04.292

[37] Cali MAA, Fernandez-Lopez L, Navarro-Zaragoza J, Caravaca-Sánchez F, Falcon M. Smartphone Addiction among Adolescents in Southern Italy and Correlation with Other Risky Behaviors. Actas Esp Psiquiatr 2024;52:632-40. https://doi.org/10.62641/aep.v52i5.1664.

[38] Caponnetto P, Inguscio L, Valeri S, Maglia M, Polosa R, Lai C, Mazzoni G. Smartphone addiction across the lifetime during Italian lockdown for COVID-19. J Addict Dis 2021;39:441-9. https://doi.org/10.1080/10550887.2021.1889751.

[39] Vitale E, Mea R. Comorbidity, Eating Behaviors and Smartphone Addiction in Italian Nurses' Characteristics. Endocr Metab Immune Disord Drug Targets 2024;24:1431-44. https://doi.org/10.2174/0118715303271067231129103920.

[40] Cash H, Rae CD, Steel AH, Winkler A. Internet Addiction: A Brief Summary of Research and Practice. Curr Psychiatry Rev 2012;8:292-8. https://doi.org/10.2174/157340012803520513.

[41] Kumar M, Mondal A. A study on Internet addiction and its relation to psychopathology and self-esteem among college students. Ind Psychiatry J 2018;27:61-6. https://doi.org/10.4103/ipj.ipj_61_17.

[42] Genovese C, Spataro P, Venuto R. Gambling addiction in a cohort of University students of Southern Italy: a cross sectional study. EuroMediterranean Biomed J 2022;25:117-22. https://doi.org/10.3269/1970-5492.2022.17.25.

[43] Tullett-Prado D, Stavropoulos V, Gomez R, Doley J. Social media use and abuse: Different profiles of users and their associations with addictive behaviours. Addict Behav Rep 2023;17:100479. https://doi.org/10.1016/j.abrep.2023.100479.

[44] Kuss DJ, Griffiths MD. Social Networking Sites and Addiction: Ten Lessons Learned. Int J Environ Res Public Health 2017;14:311. https://doi.org/10.3390/ijerph14030311.

[45] Zheng Y, Wei D, Li J, Zhu T, Ning H. Internet Use and Its Impact on Individual Physical Health. IEEE Access 2016;4:5135-42. https://doi.org/10.1109/ACCESS.2016.2602301.

[46] Genovese C, Mazzitelli F, Trimarchi G, D'Amato S, Squeri R, Venuto R, Pappalardo R, La Fauci V. Electromagnetic fields: a KAP study in a cohort of young adults. Euromediterranean Biomed J 2023;18:135-40. https://doi.org/10.3269/1970-5492 .2023.18.28.

[47] Rodríguez-García AM, Moreno-Guerrero AJ, López Belmonte J. Nomophobia: An Individual's Growing Fear of Being without a Smartphone-A Systematic Literature Review. Int J Environ Res Public Health 2020;17:580. https://doi.org/10.3390/ijerph17020580.

[48] Xiao Y, Meng Y, Brown TT, Keyes KM, Mann JJ. Addictive Screen Use Trajectories and Suicidal Behaviors, Suicidal Ideation, and Mental Health in US Youths. JAMA 2025;334:219-28. https://doi.org/10.1001/jama.2025.7829.

[49] Nagata JM, Smith N, Alsamman S, Lee CM, Dooley EE, Kiss O, Ganson KT, Wing D, Baker FC, Gabriel KP. Association of Physical Activity and Screen Time With Body Mass Index Among US Adolescents. JAMA Netw Open 2023;6:e2255466. https://doi.org/10.1001/jamanetworkopen.2022.55466.

[50] Turnbull Tiffanie. Kids locked out of social media apps after Australia's world-first ban. BBC News 2025. Available at: https://www.bbc.com/news/articles/cgl6gkd7pz6o. Accessed on: 10/01/2026.

[51] Ministero dell'Istruzione e del Merito. (2025, June 16). Circolare n. 3392 del 16 giugno 2025: Disposizioni in merito all'uso degli smartphone nel secondo ciclo di istruzione. Available at https://www.mim.gov.it/-/circolare-n-3392-del-16-giugno-2025. Accessed on: 10/01/2026.

[52] Voinea GD, Boboc RG, Buzdugan ID, Antonya C, Yannis G. Texting While Driving: A Literature Review on Driving Simulator Studies. Int J Environ Res Public Health 2023;20:4354. https://doi.org/10.3390/ijerph20054354.

[53] Kuss DJ, Griffiths MD. Social Networking Sites and Addiction: Ten Lessons Learned. Int J Environ Res Public Health 2017;14:311. https://doi.org/10.3390/ijerph14030311.

[54] Montag C, Lachmann B, Herrlich M, Zweig K. Addictive Features of Social Media/Messenger Platforms and Freemium Games against the Background of Psychological and Economic Theories. Int J Environ Res Public Health 2019;16:2612. https://doi.org/10.3390/ijerph16142612.

[55] Skogen JC, Bøe T, Finserås TR, Sivertsen B, Hella RT, Hjetland GJ. Lower Subjective Socioeconomic Status Is Associated With Increased Risk of Reporting Negative Experiences on Social Media. Findings From the "LifeOnSoMe"-Study. Front Public Health 2022;10:873463. https://doi.org/10.3389/fpubh.2022.873463.

[56] La Fauci V, Mondello S, Squeri R, Alessi V, Genovese C, Laudani N, Cattaruzza MS. Family, lifestyles and new and old type of smoking in young adults: insights from an Italian multiple-center study. Ann Ig 2021;33:131-40. https://doi.org/10.7416/ai.2021.2419.

[57] La Fauci V, Squeri R, Spataro P, Genovese C, Laudani N, Alessi V. Young people, young adults and binge drinking. J Prev Med Hyg 2019;60:E376-85. https://doi.org/10.15167/2421-4248/jpmh2019.60.4.1309.

[58] La Fauci V, Squeri R, Genovese C, Alessi V, Facciolà A. The 'Dangerous Cocktail': an epidemiological survey on the attitude of a population of pregnant women towards some pregnancy risk factors. J Obstet Gynaecol 2020;40:330-5. https://doi.org/10.1080/01443615.2019.1621818.

[59] Spataro P, Visalli G, Mazzù F, Cosenza B, Palamara MAR, Campanella G, Picerno IAM, Squeri R, La Fauci V, Genovese C. An evaluation of gambling addiction and video lottery in the South of Italy. EBPH 2019;16:1-9. https://doi.org/10.2427/12983.

[60] Serra G, Lo Scalzo L, Giuffrè M, Ferrara P, Corsello G. Smartphone use and addiction during the coronavirus disease 2019 (COVID-19) pandemic: cohort study on 184 Italian children and adolescents. Ital J Pediatr 2021;47:150. https://doi.org/10.1186/s13052-021-01102-8.

[61] Kuss DJ. Online harms: Problematic technology use is a public health concern and requires a multistakeholder approach. Addict Behav Rep 2025;21:100602. https://doi.org/10.1016/j.abrep.2025.100602.

[62] Bong SH, Won GH, Choi TY. Effects of Cognitive-Behavioral Therapy Based Music Therapy in Korean Adolescents with Smartphone and Internet Addiction. Psychiatry Investig 2021;18:110-7. https://doi.org/10.30773/pi.2020.0155.

[63] Venuto R, D'Amato S, Genovese C, Squeri R, Trimarchi G, Mazzitelli F, Pappalardo R, La Fauci V. How sizeable are the knowledge, attitude and perception of food risks among young adults? An Italian survey. Epidemiol Prev 2024;48:40-7. https://doi.org/10.19191/EP24.1.A595.019.

[64] Rizzo CE, Venuto R, Tripodi P, Bartucciotto L, Ventura Spagnolo E, Nirta A, Genovese G, La Spina I, Sortino S, Nicita A, Loddo F, Romeo B, Squeri R, Genovese C. From Guidelines to Action: Tackling Risk Factors for Surgical Site Infections. Antibiotics (Basel) 2025;14:40. https://doi.org/10.3390/antibiotics14010040.

[65] Loddo F, Laganà P, Rizzo CE, Calderone SM, Romeo B, Venuto R, Maisano D, Fedele F, Squeri R, Nicita A, Nirta A, Genovese G, Bartucciotto L, Genovese C. Intestinal Microbiota and Vaccinations: A Systematic Review of the Literature. Vaccines (Basel) 2025;13:306. https://doi.org/10.3390/vaccines13030306.

[66] Venuto R, Pappalardo R, Genovese C, Trimarchi G, Squeri R, La Spada G, La Fauci V. Indoor air pollution: an Italian Knowledge, Attitude and Practice (KAP) study among the general population. Ann Ig 2024;36:683-94. https://doi.org/10.7416/ai.2024.2640.

[67] La Fauci V, Squeri R, Genovese C, Anzalone C, Fedele F, Squeri A, Alessi V. An observational study of university students of healthcare area: knowledge, attitudes and behaviour towards vaccinations. Clin Ter 2019;170:e448-53. https://doi.org/10.7417/CT.2019.2174.

[68] Venuto R, Rizzo CE, Lo Giudice D, Fries W, Ceccio C, Fedele F, Squeri R, Genovese C. Vaccination Coverage in Adult Patients with Inflammatory Bowel Disease: Impact of a Tailored Vaccination Pathway Including COVID-19 and Herpes Zoster in a University Hospital Vaccination Center. Vaccines (Basel) 2025;13:961. https://doi.org/10.3390/vaccines13090961.

Received on October 18, 2025. Accepted on January 16, 2026.

Correspondence: Raffaele Squeri, Via Consolare Valeria 1, 98124 Messina, Italy. E-mail: squeri@unime.it

How to cite this article: Venuto R, Rizzo CE, Genovese G, Trimarchi G, La Spada G, Squeri R, La Fauci V, Cristina Genovese C. The digital tether: a SA-SV based survey on smartphone addiction among young adults in Southern Italy. J Prev Med Hyg 2025;66:E466-E478. https://doi.org/10.15167/2421-4248/jpmh2025.66.4.3771