Associations between Depression Literacy and the Use of Traditional and Digital Media among Students of Moscow Universities

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Received: 22 June 2025
Accepted: 07 October 2025
Doi: 10.22038/jhl.2025.90974.1846

ABSTRACT

Background and Objectives: Depression literacy refers to knowledge and beliefs that facilitate the recognition, management, and prevention of depression, and traditional versus digital media are key channels through which mental health information is accessed. The study examined relationships between depression literacy and media consumption patterns among undergraduate students in Moscow universities.

Materials and Methods: In May 2022, a cross-sectional online survey of 420 undergraduate students at Moscow universities was conducted using convenience and snowball sampling. Depression literacy was assessed with a researcher-developed instrument grounded in the Mental Health Literacy framework and ICD-11 criteria. Kendall's tau correlations were computed in RStudio with significance set at $p<0.05$.

Results: Students demonstrated moderate depression literacy, with higher consumption of television and radio associated with greater literacy and higher use of social networks and messaging apps associated with lower literacy.

Conclusion: Differential associations between traditional and digital media consumption and depression literacy suggest tailoring mental health interventions to specific media channels and student populations.

Paper Type: Research Article

Keywords: Depression Literacy, Mental Health Literacy, Media Consumption, Social Networks, University Students, Russia.

Citation: Mikhaylova O, Katznelson P, Lukasheva D. Associations between Depression Literacy and the Use of Traditional and Digital Media among Students of Moscow Universities. *Journal of Health Literacy*. Spring 2026; 11(2): 84-100.

Introduction

Depression literacy (DL) encompasses knowledge and beliefs about depression that promote recognition, management, and prevention of the condition, spanning symptom recognition, awareness of causes and risks, knowledge of treatment options and professional help, preventive strategies, and attitudes toward stigma (1,2). Depression is a significant global health concern, affecting about 5% of the world's population (3), with approximately 3.3% of Russia's population diagnosed with depression and regional variations reflecting diverse social and economic landscapes (4,5). Among Russian university students, prevalence estimates are high—ranging from 17.8% to 28.7%, and reaching up to 54.7% during the COVID-19 pandemic (6,7). Young people aged 15–25 are especially vulnerable, with rates in Russia reaching 15–40% (8). The consequences of poor DL include delayed help-seeking, increased stigma, reduced adherence to treatment, and negative impacts on academic performance, social relationships, and long-term outcomes (3, 9, 10).

Traditional and digital media are the main channels through which individuals access mental health information (11). In Russia, media consumption patterns have undergone marked transformation in recent years, with digital platforms becoming especially prominent for university-aged populations (12). Despite attempts to improve DL via educational programs and campaigns, results remain equivocal (13). Most research to date has not disaggregated the effects of traditional versus digital media or considered their specific associations with depression literacy (14, 15). Furthermore, studies in post-Soviet contexts are limited, and Russian-speaking populations remain underrepresented in the international literature (16).

Moscow, as Russia's capital, is particularly well suited for studying media and health literacy due to its high-speed digital infrastructure, widespread internet access (17), and distinctive university landscape. Universities in Moscow attract a heterogeneous student body from all across Russia, representing a wide spectrum of socioeconomic backgrounds and regional origins (18). Compared to those in other Russian regions, Moscow universities also exhibit a higher degree of internationalization, provide greater access to advanced technology, and enroll students with more diverse demographic profiles, including many from urbanized and mobile youth cohorts (19). These features make this setting analytically important for understanding how media consumption interacts with DL among Russia's urban youth cohort.

Existing research tends to treat media as a singular entity, neglecting the differential influence of television, radio, print, social networks, messaging apps, podcasts, and internet platforms (14, 20). There is a need for more granular analyses that account for local cultural, technological, and institutional specificities (16). This study contributes by providing one of the first comprehensive examinations of traditional versus digital media associations with depression literacy in a Russian context, explicitly examining associations between traditional and digital media consumption and depression literacy

in a diverse Moscow university student sample. By identifying which media channels are linked to higher DL, the findings aim to support evidence-based, targeted mental health interventions for urban youth.

Materials and Methods

Type of Study

This study employed a cross-sectional, descriptive-correlational design to examine associations between media consumption patterns and depression literacy among undergraduate students at Moscow universities.

Population and Target Group

The target population comprised undergraduate students currently enrolled at Moscow universities, including both domestic and international students. Undergraduate students were specifically chosen as the focus population because this demographic exhibits high vulnerability to depression (prevalence rates of 17.8-54.7% during COVID-19), demonstrates heavy media usage patterns, and represents a critical developmental period where mental health literacy formation significantly impacts long-term well-being and help-seeking behaviors (6).

Time and Place of Study

Data collection was conducted in May 2022 across multiple Moscow universities using online survey methodology via the VKontakte social networking platform, which represents the leading social media platform among Russian youth (21).

Sample Size and Estimation

Prior to data collection, the target response count was set at 580 to secure an analytic sample of approximately 420 eligible and complete cases for planned estimates and correlational analyses (22,23).

This target was derived from precision planning for descriptive proportions under simple random sampling: adopting a 95% confidence level and worst-case variability p=0.50, a minimum of roughly 385 completes achieves a ±5 percentage-point margin of error, and an analytic minimum of about 420 was set to meet or exceed this precision while supporting modest subgroup comparisons (23,24).

To accommodate anticipated unit nonresponse and exclusions common in online student surveys, the required response count was conservatively inflated by approximately 30% (nonresponse/attrition allowance), yielding a response target of 580; this approach is consistent with journal norms that explicitly add a nonresponse buffer when deriving final targets (25–27).

This sample-size planning approach and reporting structure align with recommended survey best practices for transparent precision targets and nonresponse allowances (24).

Inclusion and Exclusion Criteria

Inclusion criteria: Participation was restricted to currently enrolled undergraduate students at Moscow universities who provided informed consent.

Exclusion criteria: Participants who did not complete the questionnaire in full were excluded.

Sampling Method

Given the difficulty in obtaining comprehensive student databases across multiple Moscow universities and the need for rapid data collection, convenience

sampling was employed as the initial recruitment strategy. However, due to the limited initial response through direct recruitment channels, the study transitioned to snowball sampling via VKontakte social network. The authors initially circulated survey links among their social networks, with participants subsequently encouraged to share the survey with eligible peers from their universities.

While snowball sampling is typically used for hard-to-reach populations, it was necessary in this context due to institutional access limitations across Moscow's diverse university landscape and restrictions during the COVID-19 pandemic period. This non-probability sampling approach was selected due to practical constraints and the exploratory nature of the study, though it limits generalizability to the broader Moscow university student population. The sampling method significantly contributes to the observed gender bias, as female students demonstrate higher participation rates in voluntary research in post-Soviet contexts (28).

Information Measurement Tools

Depression Literacy Scale

A researcher-developed 16-item Depression Literacy Scale was employed, based on Kutcher, Wei, and Coniglio's Mental Health Literacy framework (29) and ICD-11 criteria for depression currently used in Russian clinical practice. The scale encompasses four depression literacy dimensions: (1) symptom recognition (items 1-5), (2) prevention knowledge (items 6-10), (3) help-seeking awareness (items 11-12), and (4) stigma attitudes (items 13-16).

Sample questionnaire items include:

"A constant feeling of guilt is a symptom of depression" (symptom recognition)

"Regular physical exercise helps to prevent depression" (prevention knowledge)

Responses utilized a 5-point Likert scale (1=totally disagree, 5=totally agree), converted to binary scoring where agreement (4-5) or disagreement (1-2) received 1 point if indicating accurate depression knowledge, and 0 points otherwise. Neutral responses (3) were excluded from analysis. Total scores ranged from 0-16 points, with higher scores indicating greater depression literacy. The final Cronbach's α of 0.579 indicates unsatisfactory internal consistency (30).

Media Consumption Assessment

Media usage frequency was assessed using a five-point ordinal scale (1 = daily use, 2 = multiple times per week, 3 = multiple times per month, 4 = less than once monthly, 5 = never use). Questions were formulated based on established Russian media consumption surveys (21). Media categories included: Traditional Media (television, radio, print/online newspapers and journals, print/online books) and Digital Media (social networks and messaging apps, podcasts, other internet media including websites, forums, blogs, and streaming platforms excluding social networks and podcasts).

Statistical Analysis

Data analysis was conducted using RStudio software version 2022.07.2+576 ("Spotted Wakerobin"). Descriptive statistics characterized sample demographics and depression literacy levels. Kendall's tau correlation coefficients were selected for association analysis due to the ordinal nature of media consumption variables and non-normal distribution of depression literacy

scores, making non-parametric approaches more appropriate than Pearson correlations. Statistical significance was set at $p < 0.05$ (two-tailed tests).

Ethical Considerations

The research received institutional ethics approval (HSE University Research Ethics Committee, Protocol No. 76 (16.11.2021)) and adhered to the Declaration of Helsinki and Russian human-subjects standards. Informed consent, anonymity, and secure data storage were ensured as described below.

Informed consent was secured from all participants through online consent forms clearly explaining study purposes, voluntary participation, data confidentiality measures, and participants' rights. Data confidentiality was maintained through anonymous survey responses with no personally identifying information collected. All data were stored securely with restricted access limited to the research team.

Given the cross-sectional nature of this study involving a single online survey administration, participants were informed of their right to discontinue participation at any point during the survey completion without any consequences or penalties.

AI Usage

This manuscript was proofread using Perplexity AI, which employs large language models (including OpenAI GPT-4-class and Anthropic Claude) to assist with language clarity, academic English, and citation integration

Results

Demographic Characteristics

A total of 580 survey responses were received; after screening for enrollment status and completeness, 420 responses were eligible and included in the analysis. Responses failing eligibility (e.g., non-undergraduate or non-Moscow enrollment) and/or incomplete questionnaires were excluded prior to analysis. The final sample comprised 420 undergraduate students from Moscow universities (Table 1). Participants ranged in age from 15 to 27 years (mean = 20.1, sd = 1.8), with the majority being female (91.9%, n = 386) and 8.1% male (n = 34). The gender distribution reflects typical participation patterns in voluntary health-related research among Russian youth, where females demonstrate significantly higher engagement rates. The sample represented students from 68 Moscow universities, with the largest representation from Moscow State University (21.9%) and Higher School of Economics (9.8%). Regarding academic year distribution, first-year students comprised the largest group (34.8%), followed by fourth-year students (25.7%), third-year students (20.5%), and second-year students (19.0%). In terms of academic fields, humanities students were most represented (32.9%), followed by engineering and technical sciences (13.8%) and social sciences (13.3%). The distribution across other academic fields was relatively balanced, ranging from 2.4% to 11.2%.

Depression Literacy Levels

Moscow university students achieved an average total depression literacy score of 8.0 points (SD = 2.2) out of a possible 16 points, with scores ranging from 0 to 12 (Figure 1).

Following established depression literacy evaluation criteria where scores of 7-9 points indicate moderate literacy levels (31), these

results can be characterized as moderate depression literacy.

This interpretation is supported by participants correctly answering approximately half of the scale items on average.

As shown in Table 2, students demonstrated strong knowledge about depression symptoms, with more than 70% correctly identifying symptom-related items. Specifically, 83.1% recognized energy loss as a depression symptom, 80.4% identified constant guilt feelings, and 78.3% understood sleep disturbances as depression indicators. Only 19.7% of students correctly identified that changes in appetite are a symptom of depression, indicating a major knowledge gap in this area.

Table 1. Sociodemographic Characteristics of Study Participants (N = 420)

Parameter	Characteristic	n	%
Age (years)	15-17	15	3.6
	18-20	247	58.7
	21-23	138	32.9
	24-27	20	4.8
Gender	Male	34	8.1
	Female	386	91.9
Academic Year	1st year	146	34.8
	2nd year	80	19.0
	3rd year	86	20.5
	4th year	108	25.7
Field of Study	Humanities	138	32.9
	Engineering, Technology and Technical Sciences	58	13.8
	Social Sciences	56	13.3
	Arts and Culture	47	11.2
	Mathematical and Natural Sciences	45	10.7
	Education and Pedagogical Sciences	43	10.2
	Healthcare and Medical Sciences	23	5.5
	Agriculture and Agricultural Sciences	10	2.4
University Affiliation	Moscow State University (MSU)	92	21.9
	Higher School of Economics (HSE)	41	9.8
	Russian University of Economics (REU)	33	7.9
	Moscow State University of Psychology and Education	19	4.5
	Moscow City University	16	3.8
	Russian State Humanitarian University	15	3.6
	Peoples' Friendship University of Russia	14	3.3
	Moscow State Linguistic University	11	2.6
	Moscow State Medical University	11	2.6
	Other universities (n=58)	168	40.0
	Total	420	100.0

Note: Age range 15-27 years (m = 20.1, sd = 1.8). Other universities include 58 additional Moscow institutions with representation ranging from 1-10 participants each.

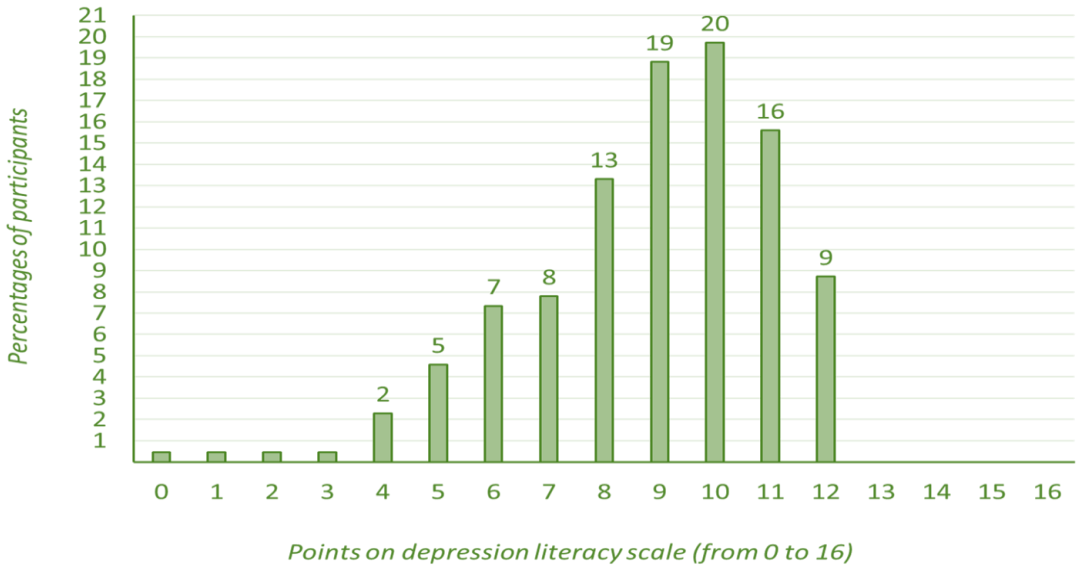

Figure 1. Distribution of points on DL scale, N=420

However, knowledge about depression prevention measures was mixed. While 96.0% correctly understood that reducing everyday stress helps prevent depression, and over 78% recognized the benefits of social communication, fewer students (67.1% and 49.6% respectively) were aware that regular physical exercise and healthy nutrition can help prevent depression.

Knowledge about help-seeking sources was moderate, with 65.6% of participants knowing where to seek psychological help and 67.9% knowing where to find reliable mental health information. According to standard categorization in quantitative surveys, a moderate level is typically defined as a knowledge rate from approximately 60% to 79% (32), distinguishing it from low (<60%) and high (≥80%) knowledge scores. Notably, stigmatization of depression was low: the vast majority (96.6%) disagreed that "depression is not a real illness," 95.2% rejected the notion that "people with depression are dangerous," and 89.6% disagreed that "having depression is a sign of personal weakness." Analyses were conducted to assess differences in depression literacy scores by both academic year and field of study.

The results of a one-way ANOVA found no statistically significant differences in overall depression literacy between students of different academic years (p=0.121), nor were any consistent differences observed across major fields of study. This suggests that depression literacy levels are relatively stable regardless of students' progression through university or their specialized area of study.

Given the strong gender imbalance in our sample (91.9% female), the possibility of gender-related differences in depression literacy was examined. No statistically significant difference in overall depression literacy was observed between male and female students. Yet, due to the very limited number of male participants, it remains

important for future research on Russian university students to recruit balanced gender samples to robustly evaluate potential gender differences in depression literacy.

Table 2. The percentages of answers on the DL scale, N=394

Component	Statement regarding depression	Yes	No
Knowledge about depression symptoms	1. A constant feeling of guilt is a symptom of depression.	80.4	19.6
	2. Changes in appetite are not a symptom of depression.	19.7	80.3
	3. The loss of energy is a symptom of depression.	83.1	16.9
	4. A feeling of lowness and sadness for two weeks is a symptom of depression.	74.0	26.0
	5. Bad sleep is a symptom of depression.	78.3	21.7
Knowledge about depression prevention measures	6. Regular physical exercise helps to prevent depression.	67.1	32.9
	7. Healthy nutrition helps to prevent depression.	49.6	50.4
	8. Reducing everyday stress helps to prevent depression.	96	4
	9. Communication with others about personal problems helps to eliminate a low mood.	78.1	21.9
	10. Communication with friends and family helps to prevent depression.	84.5	15.5
Knowledge about sources of help and information	11. I know where I could seek psychological help.	65.6	34.4
	12. I know where I can get reliable information about mental illnesses.	67.9	32.1
Stigma	13. Having depression is not a sign of personal weakness.	89.6	10.4
	14. An individual could stop being depressed if they wished.	13.1	86.9
	15. Depression is not a real illness.	3.4	96.6
	16. People with depression are dangerous.	4.8	95.2

Note – The answers that were evaluated as accurate (worth 1 point) are shaded grey. Respondents who gave indefinite answers were excluded. The statements are translated from Russian for English-speaking readers' convenience.

Media Consumption Patterns

Note regarding scale orientation: Media consumption frequency was assessed using a 5-point scale where 1 = daily use and 5 = never use. To facilitate interpretation, correlation analyses used the original scale orientation without reversal, meaning negative correlations indicate that higher frequency of use (lower numeric values) is associated with higher depression literacy.

As presented in Table 3, digital media consumption significantly exceeded traditional media usage. Social networks and messaging apps demonstrated the highest usage frequency, with 97.6% of participants using them daily and only 0.5% using them less than monthly. Other internet media

showed substantial daily usage (67.5%), while podcast consumption was more varied, with only 1.7% reporting daily use and 27.1% never using podcasts.

Traditional media consumption was considerably lower. Radio demonstrated the lowest usage, with 71.5% of participants never listening and only 1.0% reporting daily use. Television usage was moderate, with 46.9% never watching and 3.1% watching daily. Print and online books showed the highest traditional media consumption (18.2% daily use, 9.1% never use), followed by newspapers and journals (14.3% daily use, 20.0% never use).

Table 3. The frequency of media use. N=420

Source	Every day	Multiple times per week	Multiple times per month	Less than once a month	Do not use at all
Old media					
TV	3.1	13.3	14.3	22.4	46.9
Radio	1.0	4.1	5.7	17.7	71.5
Print and online news and journals	14.3	22.2	23.2	20.3	20.0
Print and online books	18.2	32.1	22.0	18.7	9.1
New media					
Social networks and messengers	97.6	1.9	0.0	0.5	0.0
Podcasts	1.7	15.5	24.0	31.7	27.1
Other internet media	67.5	25.4	3.8	2.2	1.2

Associations between Media Consumption and Depression Literacy

Table 4 presents Kendall's tau (τ) correlation coefficients between media consumption frequency and depression literacy measures. Media types were analyzed individually to examine specific associations with depression literacy dimensions, providing more granular insights than grouped analysis.

Traditional Media Associations

Television consumption showed a positive correlation with overall depression literacy ($\tau = 0.20$, $p < 0.01$), indicating that students who watched television more frequently tended to have higher depression literacy scores. This relationship was particularly evident for symptom recognition items, with significant positive correlations for energy loss recognition ($\tau = 0.18$, $p < 0.01$) and sleep disturbance recognition ($\tau = 0.11$, $p < 0.05$). Television consumption was also associated with reduced stigmatization, showing negative correlations with items suggesting depression is not a real illness ($\tau = -0.18$, $p < 0.01$) and that depressed people are dangerous ($\tau = -0.14$, $p < 0.01$).

Radio consumption demonstrated a similar positive correlation with overall depression literacy ($\tau = 0.21$, $p < 0.01$), with particularly strong associations with symptom recognition items including sleep disturbances ($\tau = 0.18$, $p < 0.01$) and energy loss ($\tau = 0.14$, $p < 0.01$). Radio usage was also linked to reduced stigmatization, showing a negative correlation with the belief that depression is not a real illness ($\tau = -0.15$, $p < 0.01$).

Print media consumption (newspapers, journals, and books) showed no statistically significant associations with overall

depression literacy scores. However, at the individual item level, book reading frequency correlated with confidence in finding reliable mental health information ($\tau = -0.11$, $p < 0.05$), while newspaper and journal reading showed a small positive correlation with the incorrect assumption that appetite changes are not depression symptoms ($\tau = 0.10$, $p < 0.05$), indicating that less frequent reading was associated with better symptom recognition.

Digital Media Associations

Social network and messaging app usage showed a negative correlation with overall depression literacy ($\tau = -0.14$, $p < 0.01$), indicating that more frequent usage was associated with lower depression literacy scores. This relationship contradicted initial study hypotheses and was particularly evident for symptom recognition items, including constant guilt feelings ($\tau = -0.10$, $p < 0.05$) and sleep disturbances ($\tau = -0.12$, $p < 0.01$). Interestingly, higher social media usage was associated with reduced stigmatization regarding depression as a sign of personal weakness ($\tau = -0.08$, $p < 0.05$).

Podcast consumption showed no statistically significant association with overall depression literacy. However, individual item analysis revealed that more frequent podcast listening correlated with better knowledge about seeking psychological help ($\tau = -0.10$, $p < 0.05$) and reduced belief that depression indicates personal weakness ($\tau = -0.13$, $p < 0.01$).

Other internet media consumption demonstrated no significant correlation with overall depression literacy scores. At the item level, more frequent usage was associated with better understanding that reducing everyday stress helps prevent depression ($\tau = -0.13$, $p < 0.01$).

Overall, correlation coefficients were generally small to moderate in magnitude ($|\tau| < 0.4$), consistent with the complex, multifaceted nature of depression literacy development and the exploratory nature of this research.

Discussion

This study examined the associations between traditional and digital media consumption patterns and depression literacy among Moscow university students. The research aimed to determine specific relationships between different media types and depression literacy dimensions, contributing to understanding of how media exposure influences mental health knowledge in post-Soviet contexts.

Depression Literacy Levels Among Moscow University Students

Our results indicated that participants achieved moderate depression literacy levels (mean score = 8.0 out of 16 points). This finding aligns with previous research on depression literacy among mixed samples of university students in other countries, including non-European contexts (33–37). The moderate literacy level suggests that Moscow university students possess basic depression knowledge but have substantial room for improvement, particularly in prevention strategies and help-seeking awareness.

Moscow students demonstrated strong symptom recognition capabilities, correctly identifying depression symptoms in over 70% of cases.

Table 4. The Kendall correlations between the frequency of media use and DL

Indicator	Old media				New media		
	TV	Radio	Newspapers and magazines	Books	Podcasts	Social networks and messaging apps	Other internet media
DL total	0.2**	0.21**	0.02	-0.02	-0.04	-0.14*	-0.01
1- A constant feeling of guilt is a symptom of depression.	0.00	0.07	0.04	-0.03	-0.03	-0.1*	-0.03
2- Changes in appetite change are not a symptom of depression.	-0.04	-0.11*	0.1*	0.02	-0.03	0.1*	0.00
3-The loss of energy is a symptom of depression.	0.18**	0.14**	0.02	0.02	0.04	-0.04	0.02
4- A feeling of lowness and sadness for two weeks is a symptom of depression.	0.03	0.12*	0.05	0.05	0.02	-0.1*	-0.03
5- Bad sleep is a symptom of depression.	0.11*	0.18**	-0.01	-0.05	-0.02	-0.12*	0.01
6- Regular physical exercise helps to prevent depression.	0.03	0.04	0.02	-0.02	0.04	-0.03	-0.04
7- Healthy nutrition helps to prevent depression.	-0.01	0.04	0.06	-0.06	0.02	0.00	0.01
8- Reducing everyday stress helps to prevent depression.	0.02	0.06	-0.04	0.06	0.00	-0.08	-0.13**
9- Communication with others about personal problems helps to eliminate a low mood.	-0.06	-0.03	-0.04	0.06	-0.03	-0.03	-0.07
10- Communication with friends and family helps to prevent depression.	0.04	0.07	0.04	0.04	0.000	-0.01	-0.04
11- I know where I could seek psychological help.	0.08	0.04	-0.08	-0.07	-0.10*	0.07	-0.06
12- I know where I can get reliable information about mental illnesses.	0.12*	0.06	-0.04	-0.11*	-0.03	0.00	-0.07
13- Having depression is not a sign of personal weakness.	0.13**	0.07	-0.05	-0.06	-0.13**	-0.08	-0.02
14- An individual could stop being depressed if they wished.	-0.12*	-0.09	-0.02	0.01	0.00	-0.09	-0.09
15- Depression is not a real illness.	-0.18**	-0.15**	-0.08	-0.02	0.02	0.00	-0.04
16- People with depression are dangerous.	-0.14**	-0.06	0.08	0.03	0.08	0.10*	0.08

Note – The scale of media consumption is reversed and statements 2 and 14–16 of the depression literacy scale are also reversed. Shaded cells indicate statistically significant correlation coefficients. N=420 for every item and N=394 for DL in total as indefinite answers were excluded from the total score calculation.

** indicates that the correlation is significant at the 0.01 level (2-tailed).

* indicates that the correlation is significant at the 0.05 level (2-tailed).

These results align with recent research among Bangladeshi students who were similarly skilled at recognizing biological and cognitive depression symptoms (36). However, knowledge gaps were evident in physical prevention measures, with only 67.1% and 49.6% of participants aware that regular exercise and healthy nutrition can help prevent depression, respectively. This suggests that targeted educational interventions should emphasize holistic prevention approaches beyond psychological strategies. Notably, only 19.7% correctly identified changes in appetite as a depression symptom, indicating a major knowledge gap in this area. This widespread misconception may be linked to the dual nature of appetite changes in depression, as both increased and decreased appetite are recognized in diagnostic criteria. Students' limited awareness may stem from inconsistencies in how these symptoms are portrayed in popular media and educational resources.

Notably, stigmatization levels were low among participants, with over 89% rejecting negative stereotypes about depression. Our findings demonstrate that Moscow university students are more similar to those in the US and Europe than in Eastern countries regarding depression stigmatization levels (38). This suggests that stigmatization may not constitute an acute barrier to mental health assistance for university youth in Moscow, though further research is needed to confirm this across broader Russian populations.

Traditional Media Associations with Depression Literacy

Television consumption showed unexpected positive correlations with depression literacy ($\tau = 0.20$, $p < 0.01$), contradicting our initial hypotheses. Students who watched television more frequently demonstrated higher depression literacy scores, particularly for symptom recognition and reduced stigmatization. This finding contradicts Kimmerle and Cress (39), who found no association between television watching and depression literacy in Australian samples. The difference may reflect varying media content quality between countries, as Australia invests significantly in mental health literacy improvement through media while Russian television may contain more variable depression portrayals.

However, our results align with research by Quintero Johnson and Riles (40) and Vogel, et. al. (41), who found complex relationships between television exposure and mental health attitudes. The positive association in our study may reflect exposure to educational content or realistic depression portrayals on Russian television, though this interpretation requires further investigation into specific content viewed.

Radio consumption similarly showed positive correlations with depression literacy ($\tau = 0.21$, $p < 0.01$). Our study may be among the first to examine radio exposure and depression literacy relationships quantitatively. The positive association suggests that radio programming in Russia may contain accurate mental health information, though this finding requires replication given limited comparable research.

Print media consumption—such as reading newspapers and magazines—was not significantly associated with overall depression literacy among students. This

suggests that, despite recent improvements in the quality of mental health coverage in print media globally (42), increased exposure to these sources does not necessarily translate into better depression knowledge in this population.

Digital Media Associations with Depression Literacy

Social network and messaging app usage showed negative correlations with depression literacy ($\tau = -0.14$, $p < 0.01$), contradicting our initial hypotheses and previous research suggesting positive effects of social media on mental health awareness (43,44). More frequent social media usage was associated with lower depression literacy scores, particularly for symptom recognition items. This relationship challenges assumptions about social media's educational potential regarding mental health topics.

The negative association may reflect several factors. First, social media algorithms may prioritize engagement over accuracy, potentially exposing users to misinformation or oversimplified depression representations. Second, the interactive nature of social media platforms, while enabling empathy and shared experiences, may also facilitate spread of inaccurate information through peer networks lacking professional mental health expertise. However, we note that higher social media usage was associated with reduced stigmatization regarding depression as personal weakness, suggesting nuanced effects across different depression literacy dimensions.

Our findings partially contradict McCosker and Gerrard (43) and Yu et al. (44), who found predominantly realistic depression discussions on social media platforms. The difference may reflect platform-specific variations, user demographic differences, or temporal changes in social media mental health content quality.

Podcast consumption showed no significant association with overall depression literacy but demonstrated positive effects on help-seeking knowledge and stigma reduction. This aligns with emerging research considering podcasts as promising mental health communication tools (45,46). The lack of overall association may reflect the relatively low podcast usage in our sample, limiting statistical power for detecting effects.

Study Limitations and Strengths: Several limitations affect result interpretation and generalizability. The sample demonstrated substantial gender bias (91.9% female), reflecting typical participation patterns in Russian health-related research where women show greater engagement (28). Future studies should include more male participants to examine potential gender effects on media-depression literacy relationships. Proportional stratified random sampling across academic majors would have improved representativeness, but it was infeasible due to the lack of comprehensive enrollment frames across 68 universities and the online recruitment approach, limiting generalizability.

The cross-sectional design precludes causal inference. The observed associations may reflect media consumption influencing depression literacy, depression literacy affecting media choices, or third variables influencing both. Longitudinal research is needed to establish causal relationships and

examine how media consumption patterns change over time in relation to depression literacy development.

The depression literacy scale demonstrated unsatisfactory internal consistency (Cronbach's α = 0.579), limiting measurement precision. Future research should employ validated instruments with stronger psychometric properties or develop culturally adapted scales for Russian populations. Additionally, media consumption measurement relied on frequency ratings rather than content analysis, preventing examination of specific depression representations encountered.

Conclusion

This study provides the first comprehensive examination of traditional versus digital media associations with depression literacy among Moscow university students. Key findings revealed that traditional media consumption (television and radio) was associated with higher depression literacy, while digital media usage (particularly social networks and messaging apps) showed unexpected negative associations with depression literacy levels.

These findings challenge common assumptions about digital media's educational benefits for mental health literacy. The results suggest that traditional media may provide more accurate or comprehensive depression information than social media platforms, possibly due to professional editorial standards and regulatory oversight. However, the complex nature of these relationships requires careful interpretation given methodological limitations.

The moderate depression literacy levels observed among Moscow students indicate substantial opportunities for targeted educational interventions. While stigmatization levels were notably low, knowledge gaps in prevention strategies and help-seeking resources suggest specific areas for improvement. Educational programs should emphasize holistic depression prevention approaches and provide clear guidance about professional mental health resources.

Recommendations for Future Research: Future investigations should employ longitudinal designs to establish causal relationships between media consumption and depression literacy development. Research should include more diverse samples with balanced gender representation and multiple geographic regions within Russia to enhance generalizability.

Advanced statistical approaches should examine potential mediating factors such as specific media content consumed, user engagement patterns, and individual differences in information processing. Studies should also investigate platform-specific effects, as different social media environments may have varying impacts on mental health knowledge acquisition.

Content analysis of media consumed by participants would provide crucial insights into the mechanisms underlying observed associations. Additionally, intervention studies examining the effectiveness of media-based depression literacy programs could inform evidence-based mental health promotion strategies for university populations.

Finally, comparative research across cultural contexts would help determine whether the observed patterns are specific to Russian populations or generalizable across post-Soviet countries, contributing to broader understanding of media influences on mental health literacy in diverse cultural settings.

Acknowledgements: None.

Availability of Data and Materials: The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Conflicts of interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Consent for publication: Not applicable.

Ethics Approval and Consent to Participate: The participants provided written informed consents. The research received institutional ethics approval (HSE University Research Ethics Committee, Protocol No. 76 (16.11.2021)) and adhered to the Declaration of Helsinki and Russian human-subjects standards.

Funding: The research was not funded.

Authors' Contributions: First author of the manuscript was involved in study design and wrote the article text, performed all calculations and did literature review. Second and third authors were involved in study design and harvested the data.

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