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THE IMPACT OF DIGITAL TECHNOLOGIES ON PSYCHOLOGICAL ADAPTATION AND SOCIAL INTEGRATION OF OLDER ADULTS: A COMPREHENSIVE ANALYSIS

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In contemporary digital society the psychological well-being and social integration of older adults are increasingly connected to their attitudes toward digital technologies and their skills in using them. This study aims to analyze the psychological impact of digital technologies on individuals aged 65 and above, focusing on psychological adaptation, social health, and cognitive functions.

The study was conducted in 2024-2025, involving 150 participants aged 65-85 years. Results indicate that active use of digital technologies can have both positive and negative psychological consequences, depending on the intensity of use, motivations, and level of social support.

Key findings show that moderate use contributes to maintaining cognitive activity and strengthening social connections, while excessive or uncontrolled use can lead to stress, anxiety, and social isolation.

Keywords: *aging, digital technologies, psychological adaptation, social integration, cognitive functions, digital divide, psychosocial well-being*

At the beginning of the 21st century, we are witnessing a digital revolution that brings radical changes to all spheres of social life. From smartphones to artificial intelligence, technological innovations affect human activity and the psychological world. In this context, questions about psychological adaptation and social integration of older adults become particularly important.

According to World Health Organization data, by 2050, the population aged 60 and above will constitute 22% of the total population. These demographic changes, combined with rapid development of digital technologies, raise questions about digital inclusion of older adults and its psychological consequences.

The digital divide—as a difference between social groups in terms of accessibility and usage skills of technological opportunities—is particularly acute among older adults. This phenomenon not only limits their access to contemporary services but can also have serious psychological consequences.

Researchers indicate that older adults' attitudes toward digital technologies are characterized by the influence of several psychological factors (Peek et al., 2014). First, there exists the phenomenon of "technostress"—psychological tension arising during the process of learning and using new technologies (Ragu-Nathan et al., 2008).

On the other hand, research shows that conscious use of digital technologies can have a positive impact on cognitive functions of older adults (Wang et al., 2023). Through the internet, social networks, and mobile applications, older adults can maintain active mental activity and social connections.

Social Integration Issues: Schwartz and Ayalon (2020) in their study demonstrated that engagement with digital technologies can significantly affect the level of social integration among older adults. Social media and video communication tools enable older adults to maintain contact with family members and friends, especially in cases of physical limitations.

However, there also exists the risk of "digital isolation," when older adults, focusing excessively on virtual communication, limit real, physical social activities (Chen et al., 2022).

Interaction Between Cognitive Functions and Digital Technologies-neuropsychological studies show that the use of digital technologies can have a complex impact on cognitive functions of older adults (Park et al., 2014). On one hand, learning new technologies can stimulate neuroplasticity and development of cognitive abilities.

On the other hand, cognitive overload and multitasking attention division can lead to cognitive fatigue and attention disorders (Mitzner et al., 2019).

The study was conducted in 2024-2025, involving 150 participants aged 65-85 years in Yerevan, Gyumri, and Vanadzor. Participant selection was carried out using stratified random sampling method.

Inclusion criteria:

- Age 65-85 years
- Urban residence
- Absence of serious mental health disorders
- Absence of significant cognitive decline

Exclusion criteria:

- Presence of dementia diagnosis
- Serious physical illnesses
- Hearing or visual impairments that interfere with technology use

Instruments

The following assessment tools were used in the study:

1. Digital Technology Usage Scale (DTUS)
2. Psychological Well-being Scale (PWBS)
3. Multidimensional Scale of Perceived Social Support (MSPSS)
4. Montreal Cognitive Assessment (MoCA)
5. Technology Anxiety Scale (TAS)

Procedure

Data collection was carried out in two phases:

Phase 1: Individual interviews with participants for collecting socio-demographic data and applying assessment tools. Interview duration was approximately 90 minutes.

Phase 2: Two-week diary study - participants recorded their daily use of digital technologies and related emotional experiences.

Statistical Analysis

Data analysis was performed using SPSS 28.0 software package. The following were used: Descriptive statistics, Pearson correlation analysis, Multiple regression analysis, Mediation analysis (Hayes PROCESS macro).

Results

Socio-demographic Characteristics

Among study participants, 62% were female, 58% lived in marital relationships. Mean age was 72.4 years (SD = 5.8). In terms of education level, 35% had higher education, 28% completed vocational secondary education, 37% had secondary education.

Regarding economic status assessment, 42% characterized their situation as "average," 34% as "below average," 18% as "low," and only 6% as "high."

Digital Technology Usage Patterns

- The study showed that 89% of participants own and use mobile phones, but only 34% have smartphones. 42% of participants own computers or laptops, while only 18% have tablets.
- 51% of participants regularly use the internet, but only 12% spend more than 2 hours daily online. 23% of participants are active on social networks, mainly Facebook and Viber.

Impact on Psychological Well-being

Correlation analysis revealed connections between digital technology use and various aspects of psychological well-being:

Table 1. Connections between digital technology use and various aspects of psychological well-being.

	Moderate use	Social network use	Info seeking	Excessive use	Tech anxiety
Moderate use	1.00				
Social network use		1.00			
Info seeking			1.00		
Excessive use				1.00	
Tech anxiety					1.00
Personal growth (opt.)	0.34				
Positive relationships (opt.)		0.28			
Life purpose clarity (opt.)			0.31		
Psychological well-being (opt.)				–0.42	
Self-acceptance (opt.)					–0.38

Positive correlations were found:

- Between moderate use and personal growth ($r = .34$, $p < .001$)
- Between social network use and positive relationships ($r = .28$, $p < .01$)
- Between information seeking and life purpose clarity ($r = .31$, $p < .001$)

Negative correlations were identified:

- Between excessive intensive use and psychological well-being ($r = -.42$, $p < .001$)
- Between technology anxiety and self-acceptance ($r = -.38$, $p < .001$)

Impact on Social Integration

Mediation analysis showed that the impact of digital technology use on social integration is mediated by the perceived level of social support ($\beta = .23$, 95% CI [.08, .41]).

A particularly important finding was that video communication users (Zoom, Skype) rated their social integration significantly higher than those who used only traditional communication means ($t(148) = 3.67$, $p < .001$).

Impact on Cognitive Functions

MoCA test results showed that participants who regularly use cognitive games and brain training applications have significantly higher cognitive indicators (M =

26.8, SD = 2.1) compared to those who do not use these tools (M = 24.2, SD = 3.4; t (148) = 4.23, p < .001).

However, excessive intensive multitasking was associated with attention concentration difficulties (r = -.29, p < .01)

Age Differences

Comparison analysis of age groups (65-70, 71-75, 76-80, 81-85 years) showed:

- 65-70 years group: Highest motivation for learning new technologies (78%), as well as lowest technology anxiety.
- 71-75 years group: Established users - mainly use basic functions.
- 76-80 years group: Significant decrease in technological engagement, increased anxiety related to complex psychological adaptation.
- 81-85 years group: Lowest usage, but among those who use, they prefer comprehensive use of one tool (usually phone).

Discussion

Main Conclusions

Study results show that the psychological impact of digital technologies on older adults has a complex, multifaceted nature. It is important to note that not the mere presence of technological tools, but their manner of use, context, and social environment have decisive significance.

Positive Effects:

Cognitive Activity Maintenance: The study confirmed that consistent and conscious use of digital technologies can contribute to maintaining cognitive functions. Particularly noteworthy were the positive effects of cognitive games and brain training applications.

Strengthening Social Connections: The use of video communication tools allows older adults to maintain active contact with family members and friends, regardless of geographical distance or physical limitations.

Negative Risks:

Technostress and Cognitive Overload: Excessive intensive or complex technology use can lead to stress, anxiety, and cognitive overload.

Digital Isolation Risk: There exists a preference for virtual communication over physical activities and real social interactions.

Impact of Age Factor:

It is remarkable that even a 5–10-year difference within the aging period can have significant impact on attitudes toward technologies and ability to use them. This indicates the necessity of adapted, age-appropriate approaches.

Importance of Social Support

Mediation analysis results clarify that social support has a mediating role between digital technology use and social integration. This indicates the crucial

importance of family and social environment support in older adults' digital adaptation process.

Limitations

The study has several limitations that should be considered when interpreting results:

1. Geographic Limitation: The study was conducted only in 3 cities of Armenia, which limits the generalizability of results.

2. Cross-sectional Design Limitations: Despite the two-phase methodology, the study cannot establish causal relationships.

3. Self-report Data Reliability: Participants' self-reports may be subject to social desirability bias or memory distortions.

Conclusions and Recommendations

Theoretical Significance

This study contributes to the joint field of aging psychology and digital technology impact analysis. The obtained results confirm that instead of a simple "positive" or "negative" approach, a comprehensive consideration of mental and social well-being is important.

Practical Recommendations:

Based on study results, the following recommendations can be made:

Development of Educational Programs: It is necessary to develop special training programs for older adults that include not only technical skills but also technostress management abilities.

Improvement of Social Services: Public organizations should develop digital services dedicated to older adults that consider their potential limitations and needs.

Family Support Programs: It is important to involve family members in older adults' digital adaptation process through appropriate educational and support programs.

Future Research Directions:

This study's results reveal several important directions for future research:

1. Longitudinal Studies: Long-term research is needed to establish causal relationships between digital technology use and psychological well-being.

2. Cross-cultural Studies: It is important to study the peculiarities of digital adaptation among older adults living in different cultural contexts.

3. Neuropsychological Studies: Future research could use brain imaging technologies to study the impact of digital technologies on brain activity.

4. Intervention Program Effectiveness Assessment: It is necessary to evaluate the effectiveness of various digital skills programs designed for older adults.

Final Conclusion

The issue of digital technologies and aging interaction cannot be characterized by simple "positive" or "negative" classification. Study results show that this interaction is characterized by complexity and multidimensionality, where individual, social, and technological factors play important roles.

Society, aging in the digital era, must develop a balanced approach to harness the potential of digital technologies for improving older adults' well-being while minimizing possible negative consequences. This requires a comprehensive, interdisciplinary approach involving psychologists, technology specialists, policy makers, and older adults themselves.

Only then is it possible to ensure that the digital revolution becomes inclusive and aimed at well-being for all age groups.

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ВЛИЯНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ НА ПСИХОЛОГИЧЕСКУЮ АДАПТАЦИЮ И СОЦИАЛЬНУЮ ИНТЕГРАЦИЮ ПОЖИЛЫХ ЛЮДЕЙ

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В современном цифровом обществе психологическое благополучие и социальная интеграция пожилых людей все более тесно связаны с их отношением к цифровым технологиям и навыками их использования. Цель данного исследования — проанализировать психологическое воздействие цифровых технологий на людей в возрасте от 65 лет и старше, с акцентом на психологическую адаптацию, социальное здоровье и когнитивные функции.

Исследование было проведено в 2024–2025 годах и включало 150 участников в возрасте от 65 до 85 лет. Результаты показывают, что активное использование цифровых технологий может иметь как положительные, так и отрицательные психологические последствия в зависимости от интенсивности использования, мотивации и уровня социальной поддержки.

Ключевые выводы свидетельствуют о том, что умеренное использование способствует поддержанию когнитивной активности и укреплению социальных

связей, тогда как чрезмерное или неконтролируемое использование может приводить к стрессу, тревожности и социальной изоляции.

Ключевые слова: *старение, цифровые технологии, психологическая адаптация, социальная интеграция, когнитивные функции, цифровое неравенство, психосоциальное благополучие.*

ԹՎԱՅԻՆ ՏԵԽՆՈԼՈԳԻԱՆԵՐԻ ԱԶԴԵՑՈՒԹՅՈՒՆԸ ՄԵԾԱՀԱՍԱԿՆԵՐԻ ՀՈԳԵԲԱՆԱԿԱՆ ՀԱՐՄԱՐՄԱՆ ԵՎ ՍՈՑԻԱԼԱԿԱՆ ԻՆՏԵԳՐՄԱՆ ՎՐԱ

Աննա Նադոյան (Երևանի պետական համալսարան, Երևան)

Անահիտ Սրեփանյան (Հայաստանի ֆիզիկական կուլտուրայի և սպորտի պետական ինստիտուտ, Երևան)

Ժամանակակից թվային հասարակությունում տարեց մարդկանց հոգեբանական բարեկեցությունը և սոցիալական ինտեգրումը ավելի ու ավելի են պայմանավորված նրանց վերաբերմունքով թվային տեխնոլոգիաների հանդեպ և դրանց կիրառման հմտություններով: Այս ուսումնասիրության նպատակն է վերլուծել թվային տեխնոլոգիաների հոգեբանական ազդեցությունը 65 և բարձր տարիքի անձանց վրա՝ շեշտը դնելով հոգեբանական հարմարվողականության, սոցիալական առողջության և ճանաչողական ֆունկցիաների վրա:

Ուսումնասիրությունը իրականացվել է 2024–2025 թթ.՝ ընդգրկելով 150 մասնակիցների՝ 65-85 տարիքային խմբից: Արդյունքները ցույց են տալիս, որ թվային տեխնոլոգիաների ակտիվ կիրառումը կարող է ունենալ ինչպես դրական, այնպես էլ բացասական հոգեբանական հետևանքներ՝ կախված օգտագործման ինտենսիվությունից, մոտիվացիաներից և սոցիալական աջակցության մակարդակից:

Հիմնական եզրակացությունները ցույց են տալիս, որ չափավոր օգտագործումը նպաստում է ճանաչողական ակտիվության պահպանմանը և սոցիալական կապերի ամրապնդմանը, մինչդեռ չափից շատ կամ անկառավարելի օգտագործումը կարող է հանգեցնել սթրեսի, անհանգստության և սոցիալական մեկուսացման:

Հանգուցային բառեր՝ *ծերացում, թվային տեխնոլոգիաներ, հոգեբանական հարմարում, սոցիալական ինտեգրացիա, ճանաչողական ֆունկցիաներ, թվային անհավասարություն, հոգեսոցիալական բարեկեցություն:*

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