



Digital Technology Overuse: Emerging Physical, Mental, Social and Economic Challenges and Strategies for Responsible Digital Use

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Digital technologies have transformed communication, agriculture, education, healthcare and commerce, making daily life more efficient and connected. India's rapidly expanding internet ecosystem has accelerated access to information and digital services across both urban and rural communities. However, excessive internet use has emerged as a significant public health and social concern. Prolonged screen time is associated with physical ailments, psychological distress, weakened social relationships and economic losses. The challenge is not technology itself, but it's inappropriate and excessive use. This article highlights the multidimensional impacts of digital technology overuse and presents practical recommendations for promoting responsible digital behaviour among individuals, families and rural communities.

Keywords: Digital technology, Internet overuse, Screen time, Digital well-being, Mental health, Extension education

Introduction

Digital technology has become an indispensable component of modern society. Smartphones, computers, tablets, artificial intelligence (AI), cloud computing and internet-based services influence almost every aspect of human life. Farmers receive real-time weather forecasts and market information through mobile applications, students attend online classes, patients consult doctors through telemedicine and entrepreneurs manage businesses digitally. India is now one of the world's largest digital economies, with nearly 969 million internet subscribers (TRAI, 2025) and rapidly increasing smartphone penetration in rural areas. Digital India, e-NAM, PM-Kisan, UMANG, Digital Agriculture Mission and numerous mobile-based advisory services have accelerated digital transformation in agriculture and rural development. Although digital technologies have improved productivity and access to information, excessive dependence on them has introduced several physical, psychological, social and economic challenges. Responsible digital use has therefore become an important public health and extension education issue.

Why Digital Technology Matters

Digital technology has significantly contributed to national development by:

- Improving agricultural extension and advisory services
- Supporting online education and skill development
- Strengthening telemedicine and healthcare delivery
- Enhancing financial inclusion through digital banking
- Improving governance through online public services
- Facilitating communication and knowledge sharing

- Promoting entrepreneurship and digital marketing
- Digital technology is therefore a powerful tool, but only when used responsibly.

Major Impacts of Excessive Internet Use

1. Physical Health Impacts: Excessive screen exposure affects nearly every body system. Common health problems include:

- Digital eye strain
- Dry eyes and blurred vision
- Frequent headaches
- Neck and shoulder pain ("Tech Neck")
- Lower back pain
- Poor posture
- Reduced physical activity
- Weight gain and obesity
- Sleep disturbances
- Chronic fatigue
- Repetitive strain injuries

Children and adolescents are especially vulnerable because prolonged screen use replaces outdoor play and physical exercise.

Extension Tip: Follow the 20-20-20 Rule

Every 20 minutes, look at something 20 feet away for at least 20 seconds. This simple habit helps reduce digital eye strain.

2. Mental and Psychological Impacts: Digital technologies stimulate continuous attention through notifications, short-form videos and algorithm-driven social media feeds. Excessive exposure may lead to:

- Anxiety
- Depression
- Stress
- Digital addiction
- Fear of Missing Out (FOMO)
- Reduced attention span
- Poor concentration
- Emotional exhaustion
- Sleep deprivation
- Reduced academic performance

Young people are particularly susceptible because entertainment, education and social interaction increasingly occur through digital platforms.

3. Social Impacts: Ironically, greater digital connectivity often results in weaker interpersonal relationships. Major social impacts include:

- Reduced family interaction
- Less face-to-face communication
- Increased social isolation
- Family conflicts over screen use
- Cyberbullying
- Exposure to misinformation
- Declining communication skills among children
- Reduced community participation

For rural communities, excessive recreational internet use may reduce participation in village meetings, self-help groups, farmer clubs and extension programmes.

4. Economic Impacts: Digital technology also influences household and national economies.

Household Level

- Higher internet expenditure
- Frequent smartphone replacement
- Online gaming expenses

- Subscription costs
- Increased electricity consumption

Individual Level

- Reduced productivity
- Loss of valuable working hours
- Poor academic performance
- Reduced employability due to internet addiction

National Level

- Increased healthcare expenditure
- Productivity losses
- Rising cybercrime
- Financial fraud
- Data security challenges

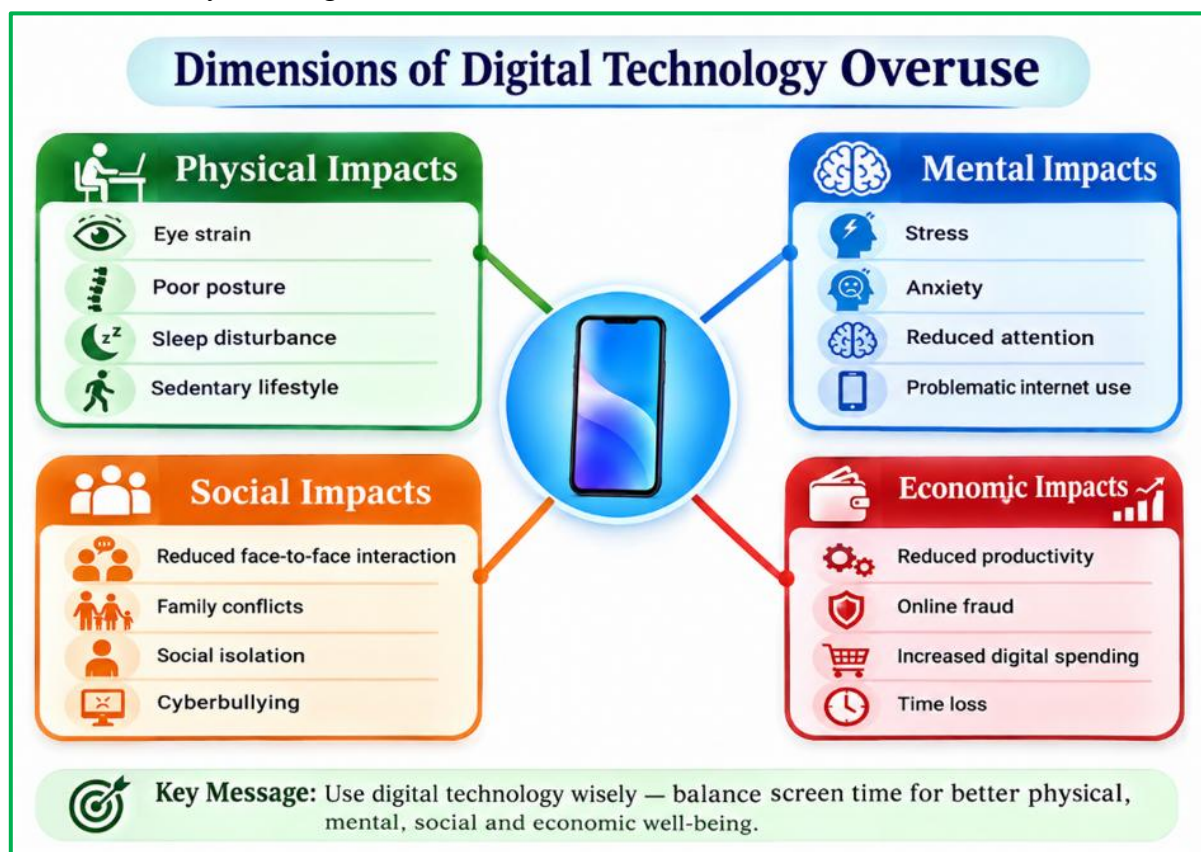


Figure 1. Dimensions of Digital Technology Overuse

Role of Extension Professionals

Agricultural extension personnel can contribute significantly by:

- Conducting digital wellness awareness campaigns.
- Training farmers on productive smartphone use.
- Promoting agricultural mobile applications over entertainment apps.
- Educating rural youth about cyber safety.
- Organizing village-level digital literacy programmes.
- Encouraging balanced digital lifestyles.

Extension education today should promote not only **digital literacy** but also **digital well-being**.

Practical Recommendations

Individuals should:

- ✓ Limit recreational screen time.
- ✓ Keep mobile phones away during meals.
- ✓ Avoid screen use one hour before bedtime.

- ✓ Exercise regularly.
 - ✓ Spend time outdoors.
 - ✓ Read printed books.
 - ✓ Monitor daily screen-time reports.
 - ✓ Disable unnecessary notifications.
 - ✓ Verify online information before sharing.
 - ✓ Schedule one **Digital-Free Hour** every day.
- Families should:
- ✓ Encourage face-to-face communication.
 - ✓ Establish technology-free family meals.
 - ✓ Delay unnecessary smartphone use among children.
 - ✓ Monitor children's internet use through guidance rather than punishment.
- Educational institutions should:
- ✓ Include digital wellness education.
 - ✓ Promote cyber safety awareness.
 - ✓ Encourage sports and cultural activities.
 - ✓ Provide counselling for problematic internet use.

Extension Message

"Technology should serve humanity—not replace healthy living. Responsible digital use enhances knowledge, productivity and well-being, whereas excessive internet use diminishes health, relationships and quality of life."

Way Forward

The future of digital society depends not only on technological innovation but also on responsible digital citizenship. Governments, educational institutions, agricultural universities, extension agencies and families must work together to promote digital wellness through awareness campaigns, school curricula, community programmes and responsible technology policies. Encouraging productive digital engagement while discouraging excessive recreational use will help create healthier individuals, stronger rural communities and a more resilient digital society.

Conclusion

Digital technology is an indispensable driver of agricultural development, education, healthcare and economic growth. Nevertheless, excessive internet use has become a growing public health and social concern affecting physical health, mental well-being, interpersonal relationships and economic productivity. The solution is not to abandon technology but to adopt balanced, responsible and purposeful digital practices. Agricultural extension professionals have an important role in promoting digital well-being alongside digital literacy. By fostering healthy digital habits, society can maximize the benefits of technology while minimizing its adverse consequences, ensuring that digital progress contributes to sustainable human development.

References

1. Telecom Regulatory Authority of India (TRAI). *The Indian Telecom Services Performance Indicators 2024–25*.
2. Government of India. *Economic Survey 2025–26*.
3. World Health Organization (WHO). Digital Health Resources.
4. Ministry of Electronics and Information Technology (MeitY). Government of India.
5. DataReportal. *Digital 2025: India*.