Mind and Society
A Peer Reviewed Research Journal in Humanities and Social Sciences

EMPIRICAL ARTICLE
ISSN-2277-6907
doi : 10.56011/mind-mri-143-20256

Exploring the Role of Metamemory, Personality Traits and Internet Addiction among Young Adults: A Comparative and Correlational Study

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Abstract

Young adults today spend a large part of their lives online—studying, socializing, and being entertained. While the internet has many benefits, too much use can lead to problems like internet addiction. Some people may be more at risk than others based on how they think about their memory (called metamemory) and their personality traits. Understanding these factors can help us know why some young people are more likely to develop unhealthy internet habits. The present study tries to explore the relationships and differences among metamemory components (feelings about memory, memory mistakes, and memory strategies), Big Five personality traits, and internet addiction among young adults. A sample of 206 young adults, in which male = 153 and female = 217, was measured using standardized tools: the Brief Big Five Personality Scale (10 items), the Multifactorial Memory Questionnaire (MMQ) with three domains—feelings about memory (18 items), memory mistakes (20 items), and memory strategies (19 items)—and the Internet Addiction Test (IAT; 6 items). Correlation analyses were performed to examine the relationships among the variables, and t-test were calculated for significant differences. The dimensions of MMQ and IAT demonstrated acceptable internal consistencies. Significant negative correlations were found between internet addiction and both satisfaction with memory and perceived memory abilities, while a positive correlation emerged between internet addiction and the use of memory strategies. Additionally, a significant positive correlation was observed between neuroticism and internet addiction, indicating that individuals high in neuroticism are more susceptible to internet addiction. Also, females have scored higher on neuroticism and internet addiction than males, with significant differences. Males have scored high on all three aspects of metamemory but have not found any significant difference. These results suggest that improving self-awareness about memory and building positive personality traits could help reduce internet addiction among young adults. Such insights can help guide college programs or counseling efforts to support healthy internet use.

ARTICLE INFO

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Dates:
Received: 02-06-2025
Accepted: 10-09-2025
Published: 30-09-2025

Keywords:
Metamemory; Internet Addiction; Big-Five Personality; Neuroticism; Memory Strategies; Young Adults

How to cite:
Tiwari, V., Upadhyay, D. K. (2025), Exploring the Role of Metamemory, Personality Traits and Internet Addiction among Young Adults: A Comparative and Correlational Study Mind and Society, 14(3) : 49-56
doi: 10.56011/mind-mri-14320256

INTRODUCTION

There's been a lot of talk lately about how our personalities, how we think about our memory, and how we use the internet might all be connected. But to be honest, the exact nature of those connections still isn't very clear. Sure, there's plenty of research out there—especially on personality traits like neuroticism or conscientiousness. But when it comes to linking that with memory awareness and internet behavior? It gets a bit murky.

Personality psychology has long focused on the Big Five traits—things like openness, extraversion, agreeableness, neuroticism, and conscientiousness—and researchers have tried to relate those to how people behave. That includes how they behave online. But there's another piece we can't ignore: metamemory. This idea, which is basically about how we monitor and understand our own memory, plays a big role in how we manage our thinking. It's especially relevant today, with so many of us relying on technology to keep track of things.

With the internet being part of our lives almost 24/7—especially for students and young adults—it's no surprise that some people are starting to wonder what it's doing to our brains. Kuss and Griffiths (2021) pointed out that excessive internet use can interfere with daily routines. Meanwhile, Liu, Wang, and Zhang (2022) reported that this kind of overuse might also cause problems with memory. And then there's Chang and Lee (2024), who argue that long-term exposure to the internet may affect how our brain handles memory, attention, and even decision-making.

Interestingly, there's the memory side of things. Metamemory is becoming a hot topic again, probably because our relationship with memory is shifting. We don't really need to remember everything anymore—our devices do that for us. But that might come at a cost. Kumar and Rai (2023) found that people with higher internet addiction scores tend to report more memory complaints. They also tend to depend more on memory aids, which could be a sign that their confidence in their own memory is slipping. Koriat (2021) talked about how metamemory includes not just what we know about our memory, but how we feel about it—like whether we trust it or not. Dunlosky and Metcalfe (2020) also emphasized its role in helping us learn and manage information.

Now, back to personality. Some traits seem to make people more vulnerable to internet problems. Musetti et al. (2021) found that people high in neuroticism, for instance, are more likely to get caught up in internet addiction. Caplan and High (2022) argued that these individuals may actually use the internet to deal with stress or negative emotions. In contrast, traits like conscientiousness or agreeableness seem to help people avoid these problems.

According to Buchanan, Paine, and Dwyer (2022), those who are more conscientious usually have better memory strategies and feel more in control of their memory. Neurotic people, on the other hand, often report more memory failures and lower confidence. Sharma and Gupta (2023) added that people who are online all the time often feel less satisfied with their memory and show signs of poor self-control.

Gender-based differences in memory-related beliefs and behaviors have long interested psychologists, although empirical findings often reveal only subtle contrasts. In many recent studies, men tend to express slightly more confidence in their memory abilities than women, even when performance outcomes show little difference between the two. These self-assessments, often referred to as "feelings about memory," reflect subjective judgments that are influenced by personal beliefs, social expectations, and prior experiences (Kaur & Singh, 2023). In contrast, women frequently adopt more structured techniques to assist memory, suggesting a preference for proactive cognitive management (Zola, Cohen, & Squire, 2022). This strategic orientation may not stem from actual performance gaps but from different ways of coping with memory demands in daily life.

Memory mistakes—minor forgetfulness in everyday routines—are commonly reported by individuals regardless of gender. However, some studies suggest men may acknowledge such errors more frequently, possibly due to differences in self-perception or attention to detail (Cocchini, Della Sala, &Logie, 2023). Still, the evidence does not support large-scale disparities. Researchers often find that lifestyle, stress levels, and mental workload contribute more significantly to everyday forgetfulness than gender alone (Della Sala, Logie, & Allen, 2023). While women may report fewer mistakes, their frequent use of memory strategies suggests a practical approach to minimizing lapses, not necessarily a stronger memory.

When personality traits are considered, certain patterns appear consistently across studies. Men often score higher on conscientiousness, a trait associated with self-discipline, organization, and reliability (Aruta, 2023). These characteristics may support efficient goal-setting and behavioral regulation. On the other hand, women tend to score higher on neuroticism, which reflects emotional sensitivity and a predisposition to anxiety or stress (Kajonius& Giolla, 2022). Such trends are not universal, but they have been observed across diverse age groups and cultural backgrounds. Dey, Kundu, and Banerjee (2023) highlight that gendered personality differences are among the most stable findings in large-scale psychological surveys.

These personality dimensions are increasingly relevant in the context of digital behavior, particularly internet use. While early research often associated

problematic internet use with male adolescents, newer findings indicate rising levels of internet dependence among women.Some research shows that women are more likely to spend time on social media because these platforms help them stay emotionally connected with others (Marengo, Longobardi, & Settanni, 2022). This may be related to the fact that women often score higher in neuroticism, which has been linked to problematic or excessive internet use (Xu, Yu, & Griffiths, 2022). On the other hand, men tend to have higher levels of conscientiousness. This means they usually use the internet in a more controlled and purposeful way (Mohammadi & Abedi, 2023). Personality traits like self-control seem to play a big role in how people manage their online habits, according to Arpaci, Baloglu, and Kesici (2022).

It's important to keep in mind that gender differences in personality and behavior aren't simple or clear-cut. Even though men and women might show some differences, these are usually small and shaped by many factors, including life experiences and social environments. Looking closely at these patterns can help us understand how people handle memory, deal with emotions, and interact with technology every day.

So, this study is trying to make sense of all that. By looking at personality traits, internet habits, and how people think about their memory—all in young adults—we hope to find out whether there's a meaningful link between these things. Because understanding how they all interact could help us better address issues like digital overuse, poor memory confidence, or even emotional instability in the digital age.

The present study aims to examine the correlation and group differences of metamemory, the Big Five personality factors, and internet addiction. It seeks to investigate how different dimensions of metamemory and personality traits are correlated with the level of internet addiction. The study intends to provide insights into the psychological correlates of internet addiction by analyzing the associative patterns among cognitive self-awareness, personality characteristics, and excessive internet use. There is also gender differences examined in these variables.

Objectives

- To investigate the relationship between metamemory components (feelings about memory, memory mistakes, and memory strategies), Big Five Personality traits and internet addictionamong young adults.
- To examinegender-based differences in metamemory, personalitytraits, and internet addiction.

Hypotheses:

H1: There will be significant correlations between metamemory components (feelings about memory, memory mistakes, and memory strategies), Big Five personality traits, and internet addiction.
H2: There will be significant gender differences in metamemory, Big Five traits, and internet addiction.

Method

Respondents: A total of372 young adults (153 males and 217 females), undergraduate students of the faculty of social sciences at MG Kashi Vidyapith were recruited conveniently. The present study utilized a purposive sampling method to select samples.

Inclusion and Exclusion Criteria: The students aging below 18 and above 24 years were included in the study; those who do not fall in this particular criterion of age were excluded from the sample. The students having any diagnosed psychological issues or physical complaints were excluded from the sample.

Measures : Three psychological measures, namely the Big Five Personality Inventory(adapted from Rammstedt& John, 2007) with 10 itemsMultifactorial Memory Questionnaire (MMQ; developed by Troyer, & Rich,) with 3 dimensions, namely feelings about memory (α = .83), memory mistakes (α = .89), and memory strategies (α = .87). The number of items is 18, 20, and 19, and the Internet Addiction Test (IAT; Ali, Hendawy et al., 2021) (α = .74) is used with 6 items administered.

Procedure : The young adults included in the study were properly approached and informed consent was obtained prior to data collection. Before the tests began, rapport was established with the participants, and they were assured that their responses would be kept confidential. After the testing, they were thanked with warm and friendly gestures. For statistical analysis, we use Pearson's r Correlation and Independent Sample t-test with the help of IBM SPSS Statistics 20.

RESULTS

Table 1: Table Showing Mean, SDs and correlations among variables

	n	*M*	*SD*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Memory – Satisfaction	372	46.34	9.51	-	.590**	-.274**	**.142***	**.324****	**.238****	**-.316****	**.298****	**-.297****
(2) Memory - Abilities	372	54.70	12.06		-	-.402**	**.169***	**.327****	**.301****	**-.385****	**.282****	**-.376****
(3) Memory - Strategies	372	30.61	12.33			-	-.095	-.067	-.040	.098	**-.109***	**.321****
(4) Extraversion	372	6.54	1.81				-	.112*	**.239****	-.117*	-.083	-.043
(5) Agreeableness	372	7.57	1.72					-	.276**	-**.270****	.297**	**-.177****
(6) Conscientiousness	372	6.88	1.74						-	-.382**	.084	**-.227****
(7) Neuroticism	372	5.51	1.87							-	-.116*	**.288****
(8) Openness to Experience	372	6.79	1.60								-	-.053
(9) Internet Addiction	372	12.01	6.51									-

** correlation is significant at the 0.01 level (2 tailed)
* correlation is significant at the 0.05 level (2 tailed)

Table 2: Showing Means and SDs of Male and Female participants, *t* values, *p* values and values of Cohen's *d* of the variables

Variables	Male		Female		*t*(370)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Feeling about Memory	46.71	9.80	46.10	9.32	1.091	.544	.063
Memory Mistakes	55.20	12.49	54.37	11.77	1.196	.516	.068
Memory Strategies	29.92	13.48	31.20	11.44	-.929	.328	**.102**
Extraversion	6.48	1.85	6.56	1.78	.838	.699	.044
Agreeableness	7.22	1.80	7.80	1.64	-1.639	**.001**	.040
Conscientiousness	6.92	1.74	6.85	1.74	1.913	.735	**.443**
Neuroticism	5.04	1.80	5.85	1.86	-4.070	**.000**	.040
Openness to Experience	6.66	1.47	6.90	1.67	-.225	.149	**.153**
Internet Addiction	11.35	6.78	12.48	6.32	-2.139	.099	**.172**

. The reliability analysis showed satisfactory internal consistency for the study variables, with Cronbach's alpha values as follows: feelings about memory (α = .83), memory mistakes (α = .89), memory strategies (α = .87), and internet addiction (α = .74).

Pearson correlation analyses revealed several significant relationships among metamemory components, personality traits, and internet addiction. Satisfaction with memory was positively correlated with extraversion (r = .142, p< .05) agreeableness (r = .324, p< .01), conscientiousness (r = .238, p< .01) and

openness to experience (r = .298, p< .01) and negatively correlated with neuroticism (r = -.316, p< .01) and internet addiction (r = -.297, p< .01). Memory abilities showed positive correlations with extraversion (r = .169, p< .05), agreeableness (r = .327, p< .01), conscientiousness (r = .301, p< .01), and openness to experience (r = .282, p< .01), while it was negatively correlated with neuroticism (r = -.385, p< .01) and internet addiction (r = -.376, p< .01). 'Memory strategies' was positively correlated with internet addiction (r = .321, p< .01) and negatively correlated with openness to experience (r = -.109, p < .05). Internet addiction itself was positively associated with neuroticism (r = .288, p< .01) and negatively correlated with agreeableness (r = -.177, p< .01) and conscientiousness (r = -.227, p< .01).

Regarding gender differences, mean scores indicated that males scored higher on feeling about memory (M = 46.71, SD = 9.80) and memory mistakes (M = 55.20, SD = 12.92) compared to females, who scored higher on memory strategies (M = 31.20, SD = 11.44). However, none of these differences reached statistical significance.

In personality traits, females scored significantly higher on agreeableness at .001 level (M = 7.80, SD = 1.64) than males (M = 7.22, SD = 1.80). Also, females scored significantly higher on neuroticism (M = 5.85, SD = 1.86) compared to males (M = 5.04, SD = 1.80) at .000 level. Internet addiction scores were higher in females (M = 12.48, SD = 6.50) than in males (M = 11.35, SD = 6.78).

DISCUSSION

The present study explored the intricate relationships between metamemory aspects, Big Five personality traits, and internet addiction among young adults, while also examining gender differences within these constructs. The findings generally support the proposed hypotheses and offer meaningful insights into how cognitive self-awareness and personality characteristics interplay with problematic internet use. Consistent with prior research (Kumar & Rai, 2023; Kuss & Griffiths, 2021), the study found significant associations between metamemory components and internet addiction. Specifically, satisfaction with memory and memory abilities were negatively correlated with internet addiction, suggesting that individuals who hold more positive attitudes about their memory and report fewer memory errors tend to exhibit lower levels of internet addiction. On the other hand, the positive correlation between memory strategies and internet addiction might reflect a compensatory mechanism, where individuals increasingly rely on external aids or strategies, possibly due to cognitive overload linked to excessive internet use (Liu, Wang, & Zhang, 2022). This nuanced relationship highlights that metamemory is not uniformly protective or risk-inducing but operates differently across its dimensions.

The interplay between personality traits and internet addiction was also prominent in the findings. Neuroticism emerged as a significant positive correlate of internet addiction because both are the negative aspects of personality, aligning with earlier studies that link high neuroticism to emotional dysregulation and maladaptive coping behaviors like excessive internet use (Caplan & High, 2022; Arpaci, Baloglu, &Kesici, 2022). Conversely, agreeableness and conscientiousness negatively correlated with internet addiction suggesting that socially cooperative and self-disciplined individuals may be less vulnerable to developing problematic online behaviors. These results reinforce the protective roles of these traits, consistent with Musetti et al. (2021) and Sharma and Gupta (2023).

Importantly, the study also identified significant correlations between aspects of metamemory and Big Five traits. For example, satisfaction with memory was positively associated with extraversion, agreeableness, conscientiousness and openness and negatively with neuroticism, which resonates with Buchanan, Paine, and Dwyer's (2022) findings that personality traits influence self-perceptions of cognitive functioning. These patterns suggest that personality may shape how individuals monitor and interpret their memory experiences, which in turn can impact behaviors such as internet use.

Gender differences observed in this study are particularly noteworthy. While no significant differences emerged in metamemory components, females scored higher on internet addiction and significantly higher on agreeableness, and neuroticism. This aligns with meta-analytic reviews indicating females tend to report higher neuroticism and problematic internet use (Aruta, 2023; Dey, Kundu, & Banerjee, 2023; Xu, Yu, & Griffiths, 2022). The higher internet addiction scores among females could reflect gender-specific emotional or social drivers, such as the use of the internet for emotional regulation or social connection, as suggested by Marengo, Longobardi, and Settanni (2022). The gender differences in personality traits might further mediate these

behavioral patterns, emphasizing the complex interplay of biological and psychosocial factors.

While the study contributes valuable knowledge, certain limitations must be acknowledged. The correlational design restricts causal interpretations, and the convenience sampling limits generalizability beyond the specific university context. Future research would benefit from longitudinal designs to unpack the directional influences among metamemory, personality, and internet addiction. Additionally, incorporating clinical assessments could help differentiate between high internet use and pathological addiction.

Implications

The study offers valuable insights into how cognitive self-awareness and personality traits relate to internet addiction in young adults. The results suggest that individuals with higher neuroticism may be more prone to excessive internet use, while those with traits like conscientiousness and agreeableness are less likely to develop such behaviors. These findings highlight the need for targeted interventions in educational settings that focus on emotional regulation, self-monitoring, and digital well-being. Integrating personality and metamemory assessments into student support services could help identify at-risk individuals and promote healthier internet habits.

Limitations

Despite the valuable insights gained, this study has some limitations that should be considered when interpreting the findings. First, the cross-sectional design restricts the ability to draw causal conclusions about the relationships between metamemory, personality traits, and internet addiction. Longitudinal studies are needed to better understand how these variables influence each other over time. Second, the use of a purposive convenience sample of undergraduate students from a single university limits the generalizability of the results to broader populations or different cultural contexts. Third, data were collected through self-report measures, which may be subject to social desirability bias or inaccuracies in self-perception, especially concerning sensitive topics like internet addiction. Finally, the study excluded participants with diagnosed psychological or physical conditions, which might have narrowed the diversity of cognitive and behavioral profiles examined. Future research should aim to address these limitations by employing diverse samples, multiple data collection methods, and longitudinal designs to deepen our understanding of the complex dynamics involved.

Future Directions

Building on the present findings, future research should consider employing longitudinal designs to explore the causal pathways between metamemory, personality traits, and internet addiction. Such studies could reveal how changes in cognitive self-awareness and personality over time influence the development or reduction of problematic internet use. Additionally, expanding the sample to include diverse populations beyond university students—such as different age groups, cultural backgrounds, and clinical populations—would enhance the generalizability and applicability of the results. Incorporating objective cognitive assessments alongside self-report measures could provide a more comprehensive understanding of metamemory processes. Moreover, investigating potential mediators and moderators, such as emotional regulation, stress, or social support, may clarify the mechanisms through which personality and metamemory affect internet addiction. Finally, designing and testing intervention programs that target both cognitive perceptions and personality-based vulnerabilities could contribute to more effective prevention and treatment strategies tailored to individual needs.

CONCLUSION

This study highlights the significant roles that metamemory components and Big-Five personality traits play in understanding internet addiction among young adults. The findings reveal that how individuals perceive and manage their memory, along with their personality characteristics—particularly neuroticism, agreeableness, and conscientiousness—are closely linked to problematic internet use. Additionally, notable gender differences suggest that tailored interventions considering these cognitive and personality factors could be more effective in addressing internet addiction. Overall, integrating cognitive self-awareness and personality insights offers a promising pathway for prevention and treatment efforts aimed at reducing internet addiction and promoting healthier digital habits in youth.

REFERENCES

Ali, R. A. M., Hendawy, A. O., Alzain, M. A., & Osman, N. F. (2021). Development and validation of a short version of the Internet Addiction Test among university students. *Journal of Behavioral Addictions, 10*(3), 686–695.https://doi.org/10.1556/2006.2021.00057

Arpaci, I., Baloglu, M., &Kesici, S. (2022). A model of problematic internet use: The role of personality traits, emotional intelligence, and social support. *Addictive Behaviors Reports, 15*, 100429.https://doi.org/10.1016/j.abrep.2022.100429

Aruta, J. J. B. R. (2023). Gender and age differences in the Big Five personality traits in Southeast Asia: A cross-cultural examination. *Personality and Individual Differences, 200*, 111004. https://doi.org/10.1016/j.paid.2022.111004

Buchanan, T., Paine, C., & Dwyer, C. (2022). Personality and memory: The role of the Big Five in metamemory. *Personality and Individual Differences, 185*, 111267. https://doi.org/10.1016/j.paid.2021.111267

Caplan, S. E., & High, A. C. (2022). Trait neuroticism and internet addiction: The mediating role of emotion regulation. *Cyberpsychology, Behavior, and Social Networking, 25*(4), 256–262.

Chang, M., & Lee, I. (2024). Cognitive and emotional consequences of internet addiction in young adults. *Journal of Behavioral Addictions, 13*(1), 15–27.

Cocchini, G., Della Sala, S., &Logie, R. H. (2023). Gender, age and the reporting of everyday memory failures: The role of individual differences. *Cognitive Neuropsychology, 40*(1–2), 49–65.https://doi.org/10.1080/02643294.2023.2173705

Della Sala, S., Logie, R. H., & Allen, R. J. (2023). Everyday memory errors and metamemory: A European survey. *Applied Cognitive Psychology, 37*(1), 172–183.https://doi.org/10.1002/acp.3981

Dey, M., Kundu, S., & Banerjee, A. (2023). Gender differences in the Big Five across adolescence: A meta-analytic review. *Journal of Adolescence, 96*, 101–115. https://doi.org/10.1016/j.adolescence.2022.12.004

Dunlosky, J., & Metcalfe, J. (2020). *Metacognition*. Sage Publications.

Kajonius, P. J., & Giolla, E. M. (2022). Personality traits across gender and countries: Support for similarities rather than differences. *Current Psychology, 41*, 1753–1763.https://doi.org/10.1007/s12144-020-00692-w

Kaur, R., & Singh, R. (2023). Gender differences in metamemory: Strategy use and memory-related self-perceptions among young adults. *Journal of Cognitive Psychology, 35*(2), 135–148. https://doi.org/10.1080/20445911.2022.2152569

Koriat, A. (2021). Metamemory: The interplay between memory and metacognition. *Annual Review of Psychology, 72*, 1-25. https://doi.org/10.1146/annurev-psych-012020-103706

Kumar, R., & Rai, S. (2023). Internet addiction and subjective memory experiences among Indian college students. Indian Journal of Psychological Science, 15(2), 45–54.

Kuss, D. J., & Griffiths, M. D. (2021). Internet addiction: A systematic review of empirical research. *International Journal of Mental Health and Addiction, 19*(1), 1-20.https://doi.org/10.1007/s11469-020-00324-0

Liu, Q., Wang, Y., & Zhang, Y. (2022). The impact of internet addiction on cognitive functions: A meta-analysis. *Computers in Human Behavior, 128*, 107086.https://doi.org/10.1016/j.chb.2021.107086

Marengo, D., Longobardi, C., & Settanni, M. (2022). Gender differences in the relationship between problematic internet use and social skills: A cross-sectional study. *Journal of Behavioral Addictions, 11*(1), 143–151.https://doi.org/10.1556/2006.2022.00012

Mohammadi, A., & Abedi, A. (2023). Personality traits and gender differences as predictors of problematic internet use among college students. *BMC Psychology, 11*, 55. https://doi.org/10.1186/s40359-023-01099-y

Musetti, A., Cattivelli, R., Giacobbi, M., & Corsano, P. (2021). Relationship between Big Five personality and pathological internet use: Mediating effects of loneliness and depression. *Frontiers in Psychology, 12*, 739981.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality, 41*(1), 203–212. https://doi.org/10.1016/j.jrp.2006.02.001

Sharma, P., & Gupta, R. (2023). Impact of internet use on memory functioning and personality traits among youth. *Psychological Studies, 68*(1), 22–30.

Troyer, A. K., & Rich, J. B. (2002). Psychometric properties of a new metamemory questionnaire for older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 57*(1), P19–P27.https://doi.org/10.1093/geronb/57.1.P19

Xu, T., Yu, L., & Griffiths, M. D. (2022). Gender differences in the relationship between smartphone addiction and psychological distress: A meta-analytic review. *Frontiers in Psychiatry, 13*, 873482.https://doi.org/10.3389/fpsyt.2022.873482

Zola, S. M., Cohen, N. J., & Squire, L. R. (2022). Metamemory across the lifespan: Gender and age effects in self-evaluation of memory performance. *Neuropsychology Review, 32*(3), 297–314. https://doi.org/10.1007/s11065-021-09517-5

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