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**INSIGHT**

The Psychological  
Dimensions  
of Society

**ІНСАЙТ:**

ПСИХОЛОГІЧНІ ВИМІРИ  
СУСПІЛЬСТВА

**INSIGHT:**

THE PSYCHOLOGICAL  
DIMENSIONS OF SOCIETY

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## ПСИХОЛОГІЧНІ ВИМІРИ СУСПІЛЬСТВА

### INSIGHT: THE PSYCHOLOGICAL DIMENSIONS OF SOCIETY

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# Insight:

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The journal covers topical issues of psychological theory and history of psychological thought; personality psychology; pedagogical and developmental psychology; social psychology; organizational psychology; legal, economic and other branches of psychological science.

## CONTENTS

**Popovych, I.**  
Editor's Preface..... 7

**GENERAL PSYCHOLOGY; PERSONALITY PSYCHOLOGY**

**Plokhikh, V.**  
Psychological Defenses of Students in the Implementation of Coping Strategies ..... 10

**Pocheketa, M.**  
Posttraumatic Growth in the Context of War: an Empirical Review of Studies 2022–2025..... 20

**SOCIAL PSYCHOLOGY; PSYCHOLOGY OF SOCIAL WORK**

**Raboczki, G., Orsi, B.**  
Perception of Female Video Game Characters in Relation to Gender Stereotypes and Sexism..... 36

## ЗМІСТ

### **Попович І.**

Передмова редактора..... 7

### **ЗАГАЛЬНА ПСИХОЛОГІЯ; ПСИХОЛОГІЯ ОСОБИСТОСТІ**

### **Плохін В.**

Психологічні захисти студентів у реалізаціях долаючої поведінки ..... 10

### **Почекета М.**

Посттравматичне зростання в умовах війни:  
огляд емпіричних досліджень 2022–2025 років..... 20

### **СОЦІАЛЬНА ПСИХОЛОГІЯ; ПСИХОЛОГІЯ СОЦІАЛЬНОЇ РОБОТИ**

### **Орсі Б., Рабоцькі Г.**

Сприйняття жіночих персонажів відеоігор у контексті  
гендерних стереотипів та сексизму..... 36

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## Editor's Preface

The latest issue, Issue 15, of the scientific journal "Insight: the psychological dimensions of society" (No.15/2026) has been published.

Currently, the scientific journal "Insight: the psychological dimensions of society" is no longer indexed in the Scopus scientometric database. On September 4, 2025, the Ethics Committee of the journal received a notification from the Scopus Content Selection & Advisory Board that the journal had been selected for re-evaluation. As part of the journal's re-evaluation process, the Editor was to complete a standard evaluation form. There were no reasons for non-compliance with the guidelines for publications. The most significant comments were as follows: 1) a considerable number of references of the Editorial Board to the studies in "Insight: the psychological dimensions of society" in other journals. This was followed by a rebuttal stating that this does not contradict the current guidelines of these journals but rather raises questions about their editorial policies; 2) the number of citations of the studies in "Insight: the psychological dimensions of society" by the authors publishing their works in "Insight: the psychological dimensions of society" has decreased, which may attest to a decline in interest in the journal. The Ethics Committee and Editorial Board of "Insight: the psychological dimensions of society" have responded to the comments: 1) manuscripts submitted by the members of our journal's editorial board did not include more citations than permitted by the

guidelines (the guidelines of journals varied, some permitted up to 20%). In other words, the current journal guidelines were not violated. We agree that the editorial policies overlooked the guidelines of these journals; 2) in SCImago Journal & Country Rank, one of the twelve indicators tracks self-citations within the journal. A rate above 20% is considered unsatisfactory, whereas a rate of up to 10% is considered excellent. In "Insight: the psychological dimensions of society", self-citation decreased from 27.6% to 6.1% in the current year. This was achieved by adding a clause to the review template that limited the number of self-citations within the journal and regulated self-citations in authors' manuscripts. Unfortunately, this was regarded as manual manipulation of the journal's ranking. On October 13, 2025, a notification was received from the Scopus Content Selection & Advisory Board regarding the termination of the journal's indexing in the Scopus database. On October 14, 2025, an appeal was filed, and the layout of the latest issue 14/2025 was submitted. The response stated that appeals are not considered. All published content remains in the Scopus database. A new application can be submitted no earlier than October 10, 2030. On November 7, 2025, the journal's profile in the Scopus database indicated that the coverage had been discontinued. Notably, throughout the entire period of indexing the journal's articles in the Scopus database, there were no comments regarding the published works and the journal's

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website.

The journal's strategy remains as follows: publishing high-quality studies; supporting high-quality psychological research on current topical issues; addressing relevant fundamental issues in psychology; expanding authors' geographical diversity; publishing articles exclusively in English; indexing in the Web of Science scientometric database; Publisher: Kherson State University.

On July 12, 2025, an application for indexing in the Web of Science database was submitted. The estimated review period for applications is six to twelve months.

Currently, the journal is officially registered in Category B, in accordance with the resolution of the Attestation Board of the Ministry of Education and Science of Ukraine dated December 11, 2025.

The scientific journal "Insight: the psychological dimensions of society" continues to publish high-quality psychological studies and supports policies of an open and democratic society with the conviction that knowledge is universal.

Issue 15 contains four documents: three scientific studies and the Editor's preface. Studies in Issue 15, 2026, represent the following sections: "General psychology; personality psychology and "Social psychology; psychology of social work".

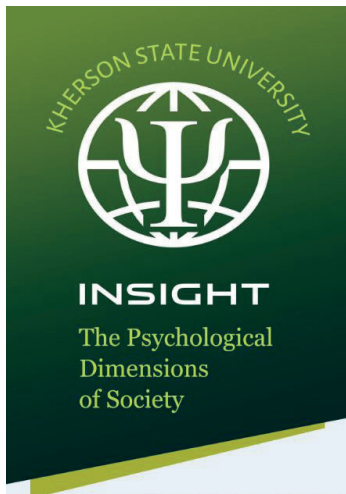
Two works are included in the section "General psychology; personality psychology". Researcher Viktor Plokhikh investigated students' psychological defenses in implementing coping strategies. The research assumed that students engaged in the learning process and motivated to successfully develop academic and professional competencies report that activation of psychological defenses in stressful conditions hinders their ability to focus on solving various problems and leads them to avoid problematic situations. The researcher found and substantiated that respondents under the influence of stressors, when choosing coping strategies, mainly focus on problem-solving strategies and are less inclined to avoid problematic situations. The research shows that respondents with heightened stress choose avoidance strategies, exhibiting psychological defenses such as regression, displacement, projection, compensation, and rationalization. Researcher Mariia Poheketa conducted an empirical review of studies on post-traumatic growth during wartime between 2022 and 2025,

using the PRISMA model. The literature search was conducted in PubMed, Scopus, and Google Scholar databases. The researcher concluded that post-traumatic growth during wartime is not an automatic consequence of trauma but is shaped by individual and social resources. The study highlights that the findings warrant further longitudinal research, particularly in the Ukrainian context, to gain a deeper understanding of post-traumatic growth mechanisms during wartime and in the post-war period.

The section "Social psychology; psychology of social work" is represented by one study. Greta Raboczki and Balazs Orsi examined the perception of female video game characters in relation to gender stereotypes and sexism. The researchers aimed to assess people's attitudes towards games and the reflection of gender stereotypes, or the lack of them. It was found that modern sexist views were more prevalent in the sample of males and females alike. Higher adherence to beauty standards was associated with greater sympathy, but did not correlate with perceived story relevance. Assigned traits were predominantly masculine, which differed from past studies' findings. The researchers generalized that female characters in today's video games deviate from pre-established stereotypical gender representations, with appearance not being the primary factor in forming opinions about sympathy or plot relevance.

The Editorial Board publishes authors' studies exclusively in English, accompanied by abstracts in English and Ukrainian. Each issue of our journal aims to publish high-quality studies. The best article will be featured in the next issue.

**Thank you for cooperation and contribution to science!**



**General psychology;  
personality psychology**

**Загальна психологія;  
психологія особистості**

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# Psychological Defenses of Students in the Implementation of Coping Strategies

## Психологічні захисти студентів у реалізаціях долаючої поведінки

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### Abstract

**Aim.** To determine the relationship between the levels of actualization of psychological defenses and students' choices of various coping strategies in conditions of intense stressors. It is assumed that for students who are passionate about the learning process and motivated to successfully master educational and professional competencies and develop skills and abilities, the actualization of psychological defenses in stressful conditions inhibit the necessary focus on solving various problems and help to avoid problem situations. **Methods.** The study involved 83 bachelor's and master's degree students aged min = 18 to max = 39 years. All respondents consented to the survey. The sample was created randomly. Three valid and reliable psychodiagnostic instruments were used, which were adapted to the Ukrainian sample: the questionnaire "Lemour-Tessier-Fillion Psychological Stress Scale (PSM-25)" (O. Shtepa); the "Lifestyle Index" method (G. Kellerman, R. Plutchyk, H. Conte); and "Coping Strategies Indicator" (CSI) (D. Amirkhan). **Results.** It was established that respondents under stress, when choosing coping strategies, are mostly oriented towards problem-solving strategies (medium to high levels) and least inclined to avoid problem situations (low levels of expression). It was found that respondents with heightened stress-induced mental tension, mainly at the average level of expression, have an increased tendency to choose a coping strategy oriented towards avoidance, along

### Анотація

**Мета.** Визначення зв'язку рівнів актуалізації психологічних захистів і виборів студентами різних копінг-стратегій в умовах інтенсивних стресогенних впливів. Зроблено припущення, що для студентів, які захоплені процесом навчання і вмотивовані на успішне опанування навчально-професійних компетенцій, формування умінь та навичок, актуалізація психологічних захистів у стресогенних умовах гальмує необхідну спрямованість на вирішення різноманітних проблем і сприяє уникненню проблемних ситуацій. **Методи.** У дослідженні взяли участь 83 здобувачі бакалаврського та магістерського рівнів вищої освіти у віці від min = 18 до max = 39 років. Усі респонденти надали згоду на проходження опитування. Вибірку створено рандомним чином. Використано три валідні й надійні психодіагностичні інструменти, що пройшли адаптацію на українській вибірці: опитувальник "Шкала психологічного стресу Лемур-Тесьє-Філліона (PSM-25)" (О. Штепа); методику "Індекс життєвого стилю" (Г. Келлерман, Р. Плутчик, Х. Конте); "Індикатор копінг-стратегій" (CSI) (Д. Амірхан). **Результати.** Установлено, що респонденти в умовах впливу стресогенних факторів при виборі копінг-стратегій здебільшого орієнтуються на стратегію вирішення проблем (рівень виразності середній, але близький до високого) і менш за все налаштовані на уникнення від проблемних ситуацій (низький рівень виразності). Констатовано, що в респондентів з підвищеним стресогенним

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# Psychological Defenses of Students in the Implementation of Coping Strategies



with increased activation of such psychological defenses as regression, substitution, projection, compensation, and rationalization. **Discussion and conclusions.** It is substantiated that in students with increased stressogenic mental tension, mainly at an average level of severity, a noticeable strengthening of psychological defenses in the adaptation process is observed, which, with a high probability, provides sufficient support for the integrity of the mental organization and does not significantly hinder an adequate response to current threats and challenges.

**Keywords:** coping strategies, academic stress, distress, motivation, educational and professional competencies, adaptation, neuropsychiatric tension, tension states.

## Introduction

In modern conditions, the volume and complexity of knowledge that are necessary for the successful self-realization of future and current specialists in most areas of professional activity are steadily and rapidly increasing. At the same time, new professionally important information, together with the rapid update of equipment and technologies, quickly becomes obsolete and becomes not only unnecessary, but also, due to the inertia of the individual experience system, makes it difficult to update the resource of necessary knowledge, skills, and abilities. As a result, due to the increase in information load in the process of forming and maintaining professional suitability, mental stress in students and specialists increases significantly, and the likelihood of the emergence and consolidation of distress increases. At the same time, the stressogenicity of students' learning is increased due to the influence of numerous extreme economic and social factors, conditions of long-term distance learning, problems in determining the prospects for the future, and, accordingly, maintaining sufficient positive motivation for cognitive activity (Akram et al., 2023; Emran et al., 2024; Olson et al., 2025; Plokhikh et al., 2025a; Plokhikh et al., 2025b; Salari et al., 2020).

In essence, any learning can be considered

психічним напруженням переважно до середнього рівня виразності спостерігається збільшення схильності до обрання копінг-стратегії, зорієнтованої на уникнення, разом з посиленням активації таких психологічних захистів, як регресія, заміщення, проєкція, компенсація, раціоналізація. **Дискусія і висновки.** Обґрунтовано, що у студентів з підвищеним стресогенним психічним напруженням переважно до середнього рівня виразності відстежується помітне посилення психологічних захистів в адаптаційному процесі з високою ймовірністю забезпечує і достатню підтримку цілісності психічної організації, і суттєво не перешкоджає адекватному реагуванню на актуальні загрози та виклики.

**Ключові слова:** копінг-стратегії, академічний стрес, дистрес, мотивація, навчально-професійні компетенції, адаптація, нерво-психічна напруга, тензійні стани.

a process of organized, purposeful transition of the individual and the system of his individual experience from the option of ignorance and uncertainty regarding important information to a more developed option of sufficient assimilation and understanding of new information, with the possibility of its subsequent implementation in the practical plane. Such a transition is a normatively regulated overcoming and elimination by the subject of educational activity of the current uncertainty and limitations of the system of experience through the solution of special educational tasks. On the other hand, the factor of uncertainty is considered one of the determinants of psychological stress (Peters et al., 2017; Valencia-Florez et al., 2023). In view of the latter, the educational activity itself turns out to be such that it is highly likely to cause a significant increase in stress-induced mental stress and, in certain circumstances, and often in a regulated manner (exams, tests, defense of individual works), causes the development of academic stress (Barbayannis et al., 2022; Granada-Granada et al., 2025; Ruiz-Camacho, & Gozalo, 2025; Suriakumar et al., 2025). With increased educational load, especially when students must self-organize and plan educational activities, prolonged stress can become chronic, with significant negative consequences for mental and physical health (Peters et al., 2017; Valencia-

Florez et al., 2023; Yaribeygi et al., 2017).

Moderate short-term stress, due to the activation of personal and intellectual potential during the adaptation process, contributes to the improvement of cognitive functions and practical implementation of the subject; a variant of eustress is realized (Sabaliauskas et al., 2025; Selye, 1975; Yaribeygi et al., 2017). In students' studies, it is in the intense mode of cognition within the structure of individual experience that new associations are formed more effectively, new semantic relationships are understood, abilities develop, and sequences of actions for the implementation of skills and abilities are firmly established. However, chronic stress ("toxic stress") becomes exhausting and destructive in terms of learning opportunities and personal resources of stress resistance (Candeias et al., 2024; Nater, 2021; Van der Hallen et al., 2020). Under the pressure of academic overload and the numerous stressors that accompany it, students' motivation for learning decreases, cognitive functions weaken, the error rate of decisions and actions increases, and the overall effectiveness of acquiring new knowledge, skills, and abilities decreases. At the same time, the development of a general, stable negative attitude towards learning as a kind of protective reaction against threats of self-destruction can be significant for the individual.

Under stress, a person activates previously formed protective mechanisms of the psyche (Plokhikh, 2022; Plokhikh, & Bilous, 2025). Psychological defenses are implemented through mental and behavioral automatisms. In content, psychological defense mechanisms are considered a safeguard against a person's awareness of internal and external dangers, as a kind of means of distancing oneself from the perception of information that contradicts and poses a threat to the integrity of the "self-concept" (APA, 2013; Walkera, & McCabe, 2021). In primary reactions to stressogenic influences, the individual tends to involuntarily distance itself, to evade messages that threaten its integrity, stability, and dignity. Usually, educational material is not dangerous, threatening, or fundamentally incomprehensible to the student. However, when the total volume of educational material significantly exceeds

the student's cognitive capabilities, the initial reaction is likely to activate psychological defenses, eliminating part of the information from perception. In this case, the eliminated information may be significant.

Psychological defenses are divided into mature and immature (Carvalho et al., 2019; Zeigler-Hill et al., 2008). Immature defenses are associated with the compensatory development of problematic mental states of anxiety, depression, and eating disorders. On the contrary, mature defenses are assessed in terms of a person's success in their activity and satisfaction with their life. Along with this, it is also important to what extent information that is significant for solving current tasks is unconsciously blocked through psychological defenses. Even if the mechanisms of mature psychological defenses have been actualized, because of this, along with the weakening of significant mental tension, significant information is lost, and solving the current task in the necessary completeness becomes difficult or impossible. The latter in critical, stressful conditions can have fatal consequences. Local failures in solving educational tasks, in themselves, are not particularly critical or problematic. A student can often solve previously unresolved problems again in more favorable conditions. But even this option can be limited by the deadline factor and lead to the development of mental stress due to a lack of time.

In stressful conditions, students choose different strategies to organize their actions. The most desirable, of course, is a positive outcome of the educational process with reliable assimilation of professionally important knowledge, skills, and abilities, and all this accompanied by a high formal assessment of success. But sometimes students consider, for example, only formal guidelines for completing training with indirect options for achieving a satisfactory result through various resources in the social environment and the flexibility of their own compensatory behavior. It is the latter option that is similar in content to the implementation of psychological defenses. In contrast, full-fledged learning requires students to successfully solve all basic educational tasks under any conditions, with an appropriate general positive attitude and a strategy for organizing educational actions.

# Psychological Defenses of Students in the Implementation of Coping Strategies



The cognitive concept of stress, in terms of the individual's adaptive resources, involves various coping strategies (Lazarus, & Folkman, 1987). In reality, the subject's choice of a specific coping strategy must, to a large extent, be coordinated with current circumstances (Sattar et al., 2022; Van der Hallen et al., 2020; Waterhouse, & Samra, 2025). For students, the most acceptable should be orientation to solving problems. Along with this, various psychological defenses activated in response to the development of academic and other stress can limit educational activity and conceal information important to solving educational tasks. Thus, the question arises about the consistency between students' disposition towards full-fledged learning and the forced restrictions imposed by the action of various psychological defenses under stressful conditions of activity.

**The aim of the research** is to determine the relationship between the levels of actualization of psychological defenses and students' choices of various coping strategies under conditions of intense stress.

**The hypothesis of the research.** For students who are oriented towards the learning process and motivated to successfully master professional knowledge, skills, and abilities, the actualization of psychological defenses in stressful conditions can inhibit the necessary focus on solving various problems and help avoid problem situations.

## Methods

**Methodology.** The methodological basis of the empirical study was based on the following theoretical approaches: systemic, the concept of psychological defenses, and concepts of stress by H. Selye (1975), R. Lazarus and S. Folkman (1987).

**Participants.** The empirical study involved 83 male and female students (bachelor's and master's levels of higher education) who were citizens of Ukraine (age in years:  $Me = 19.00$ ;  $min = 18.00$ ;  $max = 39.00$ ). There were six males. The subjects voluntarily agreed to participate in the study with the possibility of later refusal. The sample of subjects was randomly selected.

**Variables.** In the empirical study, students were diagnosed with stress-induced mental stress, psychological defenses, and coping strategies. The

parameters of the general tension of psychological defense and the level of manifestation of the following psychological defense mechanisms were determined: displacement, regression, substitution, denial, projection, compensation, hypercompensation, and rationalization. The following coping strategies were found to have advantages: problem-solving, seeking social support, and avoiding problems.

**Organization of Research.** Empirical research is correlational. Empirical data were obtained in the first quarter of 2026. The empirical research was conducted during the academic semester. Test tasks with instructions for completion were provided by the research package via e-mail. The results of the test tasks were returned to the researchers by the research participants via e-mail.

**Procedures and Instruments.** The subjects performed tasks using three standardized test methods: a method for assessing manifestations of psychological defenses; a method for diagnosing stress-induced mental stress; and a method for examining tendencies to use various coping strategies.

The severity of stress-induced mental stress was diagnosed using the Psychological Stress Scale by Lemur-Tessier-Fillion (PSM-25) (Shtepa, 2012). The values of the psychological stress index (PSI) diagnosed using the PSM-25 method were analyzed using the following scale to determine the level of stress: low – less than 100 points; medium –  $100 \div 154$  points; high – more than 155 points.

To assess the severity of manifestations of the studied psychological defenses, the "Lifestyle Index" method was used (questionnaire by G. Kellerman, R. Plutchik, H. Conte). The method determines the severity of activation of eight mechanisms of psychological defense of the individual (repression, regression, substitution, denial, projection, compensation, hypercompensation, rationalization) in percentage terms, as well as the overall tension of psychological defenses. A significant level of manifestation of psychological defense mechanisms is defined as exceeding 50% (Neurova et al., 2016).

The propensity to use various coping strategies was determined using the "Coping Strategy Indicator" (CSI) method (D. Amirkhan). The levels

of expressiveness in the use of coping strategies were as follows: very low (“problem-solving” < 16 points; “seeking social support” < 13 points; “avoiding problems” < 15 points), low (“problem-solving” – 17 ÷ 21 points; “seeking social support” – 14 ÷ 18 points; “avoiding problems” – 16 ÷ 23 points), medium (“problem-solving” – 22 ÷ 30 points; “seeking social support” – 19 ÷ 28 points; “avoiding problems” – 24 ÷ 26 points), high (“problem-solving” > 31 points; “seeking social support” > 29 points; “avoiding problems” > 27 points) (Zlyvkov et al., 2016).

**Statistical Analysis.** For quantitative analysis of empirical data, IBM SPSS Statistics 20 was used. The internal consistency of the diagnosed parameters was assessed using Cronbach’s  $\alpha$ . In the general group of subjects, a group with signs of low stress ( $n = 39$ ) and a group with signs of medium and high stress ( $n = 44$ ) were distinguished. The correspondence of the distribution of data samples to the normal law was determined by the Kolmogorov-Smirnov test. The statistical correlation between the diagnosed parameters was established using Spearman’s

correlation coefficient ( $R_s$ ). Statistical differences between groups of subjects were determined using the Mann-Whitney U-test. The advantages of using different coping strategies within the selected groups were established by the Friedman and Wilcoxon signed-rank statistical criteria.

**Results**

The obtained empirical data are internally consistent ( $\alpha = .829$ ). For most of the parameters considered, the distributions of data samples in the general group and in separate groups of subjects differ from normal (Kolmogorov-Smirnov test). Given this, the statistical relationship between the parameters was determined using Spearman’s correlation coefficient. In the general group of subjects, the presence of significant direct relationships of psychological defenses with the severity of stress-induced mental stress was established (Table 1). Along with this, only the coping strategy of avoiding problems has a significant direct relationship with stress-induced mental stress ( $r_s = .447$ ;  $p < .001$ ).

**Table 1.** Statistical relationship (Spearman’s test) between psychological defenses and stress-induced mental tension in the general group of subjects

Statistical parameter	Dp	Rg	Sb	Dn	Pj	Cp	Hc	Rn	TPV
$r_s$	.271*	.509**	.513**	.129	.371**	.442**	.289**	.196	.584**
$p$	.013	<.001	<.001	.247	.001	<.001	.008	.077	<.001

**Note:** SP – statistical parameter; Dp – displacement; Rg – regression; Sb – substitution; Dn – denial; Pj – projection; Cp – compensation; Hc – hypercompensation; Rn – rationalization; TPV – total protection voltage; \* –  $p \leq .050$ ; \*\* –  $p \leq .001$ .

Statistical relationships between the psychological defenses of the subjects and their propensities to choose coping strategies were also examined (Tabl. 2).

**Table 2.** Statistical relationship (Spearman’s test) between psychological defenses and the use of coping strategies in the general group of subjects

Psychological Defenses	Statistical parameters	Coping Strategies		
		Problem-Solving	Seeking Social Support	Avoiding Problems
Displacement	$r_s$	-.241*	-.100	.160
	$p$	.028	.368	.148

## Psychological Defenses of Students in the Implementation of Coping Strategies



Regression	$r_s$	-.258*	.205	.337**
	$p$	.018	.063	.002
Substitution	$r_s$	-.208	.085	.448**
	$p$	.059	.443	< .001
Denial	$r_s$	.066	.067	.016
	$p$	.554	.545	.889
Projection	$r_s$	-.146	-.084	.340**
	$p$	.187	.451	.002
Compensation	$r_s$	-.093	.403**	.411**
	$p$	.403	< .001	< .001
Hypercompensation	$r_s$	-.078	-.099	.238*
	$p$	.482	.373	.030
Rationalization	$r_s$	.139	.137	.086
	$p$	.209	.216	.442
Total Protection Voltage	$r_s$	-.182	.153	.473**
	$p$	.099	.168	< .001

**Note:** \* –  $p \leq .050$ ; \*\* –  $p \leq .001$ .

According to the level of stress-induced mental stress, the general group was divided into two groups. Group 1 included subjects ( $n = 39$ ), in whom stress manifestations were practically absent ( $Me = 76.00$ ;  $min = 30.00$ ;  $max = 97.00$ ). Group 2 consisted of subjects ( $n = 44$ ) with mainly medium and in some cases high levels ( $Me =$

$117.50$ ;  $min = 100.00$ ;  $max = 172.00$ ) of stress-induced mental states. According to the Mann-Whitney U-criterion, the groups were compared in terms of the expressiveness of psychological defenses and the degree of use of various coping strategies (Tabl. 3, Tabl. 4).

**Table 3.** Statistical comparison of the expressiveness of psychological defenses in the groups of subjects using the Mann-Whitney U-test

Group	SP	Dp	Rg	Sb	Dn	Pj	Cp	Hc	Rn	TPV
1 ( $n=39$ )	Me	30.00	29.40	10.00	36.00	42.00	20.00	30.00	50.00	34.00
	min	.00	.06	.00	9.00	.25	.00	.00	25.00	13.00
	max	90.00	88.00	100.00	100.00	100.00	100.00	100.00	100.00	96.70
2 ( $n=44$ )	Me	30.00	47.00	30.00	45.00	58.00	40.00	30.00	58.15	44.57
	min	.00	.06	.00	.00	.00	10.00	.00	16.66	20.00
	max	80.00	70.58	100.00	72.73	100.00	80.00	100.00	100.00	66.30
SP	$U$	657.50	402.00	430.50	764.00	587.50	511.50	688.00	657.50	361.00
	$p$	.064	.000	.000	.390	.013	.001	.115	.065	.000

**Note:** SP – statistical parameter; Dp – displacement; Rg – regression; Sb – substitution; Dn – denial; Pj – projection; Cp – compensation; Hc – hypercompensation; Rn – rationalization; TPV – total protection voltage.

**Table 4.** Statistical comparison of the expressiveness of the use of coping strategies in the study groups using the Mann-Whitney U-test

Group	Statistical parameters	Problem-Solving	Seeking Social Support	Avoiding Problems
1 (n=39)	Me	28.00	20.00	16.00
	min	17.00	11.00	11.00
	max	33.00	33.00	24.00
2 (n=44)	Me	26.00	22.50	19.50
	min	13.00	12.00	13.00
	max	32.00	33.00	29.00
SP	<i>U</i>	640.00	681.00	472.50
	<i>p</i>	.046	.106	.000

Within each group, the advantages in the use of coping strategies were determined using Friedman’s statistical criteria and Wilcoxon’s signed-rank test. In both groups, the subjects were most oriented towards problem-solving and least oriented towards problem avoidance ( $\chi^2 = 37.660$ ;  $df = 2$ ;  $p < .001$  and  $\chi^2 = 22.037$ ;  $df = 2$ ;  $p < .001$ ). Also, in both groups, the coping strategy of “problem-solving” ranked first in frequency of use, followed by requests for social support ( $Z = 5.451$ ;  $p < .001$  and  $Z = 5.781$ ;  $p < .001$ ). It should be added that in the general group of subjects, no significant statistical correlation was established between the coping strategy “problem-solving” and the coping strategies “avoiding problems” ( $r_s = -.054$ ;  $p = .627$ ) and “seeking social support” ( $r_s = .102$ ;  $p = .361$ ).

### Discussion

According to the results obtained, more than half (53.0%) of the studied students are in a state of mostly moderate stress. Only in three cases (3.6%) was severe stress noted. Such a result can be considered characteristic of the student community in conditions of a significant semester academic workload. Naturally, during examination sessions, the frequency and intensity of stress usually increase. High values of indicators of stressful mental tension due to high academic demands are also noted according to the results of other studies, and this is rather the rule than the exception (Akram et al., 2023; Granada-Granada et al., 2025; Olson et al., 2025; Sabaliauskas et al., 2025).

As predicted, the increase in stress-induced mental stress in the general group is statistically directly linked to the increase in the manifestations of almost all the considered psychological defenses (see Tabl. 1). Accordingly, the overall level of expressiveness of the implementation of mental defense mechanisms in Group 2 is also significantly higher, compared to Group 1 (see Tabl. 3). However, most of the psychological defenses in both groups are manifested insignificantly. Significant expressiveness can primarily be noted only in relation to the manifestations of projection and rationalization in the studied subjects with a predominantly average level of stress. Compensatory reactions are also enhanced in stress. Thus, although the activity of psychological defenses in a state of stress among students increases during the semester of study, this increase is not critical and is unlikely to have a significant impact on the overall success of study.

Along with the increased activation of psychological defenses by students in a state of stress, their tendency to consciously choose the coping strategy of “avoiding problems” also increases (see Tabl. 2). Such synchronization of different processes, given the similarity of their functional orientation, is natural and completely understandable (automatic avoidance, blocking, distortion of unpleasant information and conscious avoidance of problematic circumstances and acute contradictions). At the same time, students’ psychological defenses can be implemented in various and, sometimes, dangerous ways. Such options can be, for example,

# Psychological Defenses of Students in the Implementation of Coping Strategies



the abuse of psychoactive substances and alcohol (Sattar et al., 2022).

Moderate stress in the subjects contributes to a decrease in their general orientation to problem-solving (see Tabl. 4). However, in comparison with the other considered options for coping behavior, the indicated orientation adequate for the educational process in students remains a priority. At the same time, the orientation to problem-solving in both groups is much more prevalent, and the choice of the coping strategy “search for social support” is expressed at an average level. The latter result is also noteworthy given that, as evidenced in the literature, students under stress very often turn to friends, teachers, and relatives for help (Sattar et al., 2022; Suriakumar et al., 2025).

For the general group of subjects, correlation analysis showed that the choices of the coping strategy “problem-solving” are inversely statistically related to immature psychological defenses “displacement”, “regression” and, partially, “substitution” (see Tabl. 2). But the level of activation of these psychological defenses in the subjects should be considered uncritical. In stressful conditions, the use of students’ defense mechanisms of displacement, regression, and substitution somewhat weakens their general focus on solving problems. And this result is generally consistent with the literature (Carvalho et al., 2019; Zeigler-Hill et al., 2008). However, the structure of the overcoming behavior of the studied students does not undergo any fundamental negative changes and remains fully adequate for organizing sufficiently successful educational activities. As a positive aspect, it should also be noted that the low activity of psychological defenses adequately serves its functional purpose – the situational elimination of excessive mental stress and the preservation of the individual’s integrity of the mental organization (APA, 2013).

The analysis and interpretation of the results of the study confirm the hypothesis put forward above. Stress does have a negative impact on the ability students to implement adequate coping behaviors in a problem-solving orientation to organize the learning process. However, with moderate stress, this effect is not destructive, and with appropriate supportive measures, it can be neu-

tralized promptly.

Further studies can be aimed at determining the flow of psychological defenses in the organization of educational activities of students who are in a state of severe stress. It is also important to find ways to mitigate the negative effects of the activation of students’ psychological defenses during the learning process.

## Conclusions

Students under stress, when choosing coping strategies, are mostly oriented towards problem-solving (medium to high levels) and least inclined to avoid problem situations (low level of expression).

In students with increased stress-induced mental tension, particularly at the average level of expression, there is an increase in the tendency to choose a coping strategy oriented towards avoidance, along with increased activation of psychological defenses such as regression, substitution, projection, compensation, and rationalization.

In students with increased stress-induced mental tension, mainly at the average level of expression, there is an increase in a significant number of psychological defenses, which weakens, but does not fundamentally change the orientation towards choosing a coping strategy aimed at solving problems. This orientation is also not statistically related to the increased expression of psychological defenses, such as projection and rationalization.

In students with increased stressogenic mental tension, mainly to an average level of severity, a noticeable strengthening of psychological defenses during the adaptation process, with a high probability, provides sufficient support for the integrity of the mental organization and does not significantly hinder an adequate response to current threats and challenges.

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5

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## Posttraumatic Growth in the Context of War: an Empirical Review of Studies 2022–2025 Посттравматичне зростання в умовах війни: огляд емпіричних досліджень 2022–2025 років

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**Purpose.** This article presents a systematic review of empirical research on posttraumatic growth in the context of war published in 2022–2025. The primary aim is to synthesize current scientific evidence on the levels, determinants, and psychological mechanisms of posttraumatic growth under war-related conditions, taking into account both individual and collective dimensions of this phenomenon, and to identify common trends and methodological limitations in the existing literature. **Methods.** The study was conducted as a systematic literature review using the PRISMA framework. Bibliographic searches were performed in Scopus, PubMed, and Google Scholar. The review included peer-reviewed empirical studies published in 2022–2025 that examined manifestations and predictors of posttraumatic growth in samples of internally displaced persons, civilian populations, helping professionals, and other war-affected groups. **Results.** Sixteen studies were included in the final synthesis. Findings indicate that posttraumatic growth is a multidimensional and dynamic process associated with cognitive processing of traumatic experience, types of rumination, adaptive coping strategies, personal resources (e.g., hope, self-efficacy), social support, and identity transformation. Particular attention is given to collective posttraumatic growth, expressed in increased social solidarity and shared meaning-

### Анотація

**Мета.** Стаття присвячена систематичному огляду емпіричних досліджень посттравматичного зростання в умовах війни, опублікованих у період 2022–2025 років. Основною метою є узагальнення сучасних наукових даних щодо рівня, чинників і психологічних механізмів посттравматичного зростання в умовах війни, з урахуванням індивідуальних і колективних вимірів цього феномену, а також виявлення спільних тенденцій та методологічних обмежень наявних досліджень. **Методи.** Дослідження виконано у форматі систематичного огляду літератури із застосуванням моделі PRISMA. Бібліографічний пошук здійснено в базах даних Scopus, PubMed та Google Scholar. До огляду включено рецензовані емпіричні дослідження, опубліковані в 2022–2025 роках, що аналізують прояви та предиктори ПТЗ у вибірках внутрішньо переміщених осіб, цивільного населення, фахівців допоміжних професій та інших груп, постраждалих від війни. **Результати.** До фінального синтезу включено шістнадцять досліджень. Встановлено, що посттравматичне зростання є багатовимірним і динамічним процесом, пов'язаним із когнітивною переробкою травматичного досвіду, типами румінації, адаптивними копінг-стратегіями, особистісними ресурсами (надія, самоефективність), соціальною підтримкою та трансформацією ідентичності. Особливу увагу приділено феномену колективного посттрав-

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making in the context of collective traumatic experience. **Conclusions.** Posttraumatic growth in war conditions is not an automatic consequence of trauma; rather, it develops when individual and social resources are available and when individuals engage in an active process of meaning-making of the lived experience. Synthesizing current empirical findings deepens theoretical understanding of posttraumatic growth under prolonged wartime exposure and outlines directions for further research – especially the need for future longitudinal studies, including those in the Ukrainian context, to better understand mechanisms of posttraumatic growth during and after war.

**Keywords:** posttraumatic stress disorder, internally displaced persons, coping strategies, social support, identity transformation, collective posttraumatic growth.

### **Introduction**

Following World War II, a substantial increase in the number of armed conflicts has been documented, affecting regions inhabited by approximately one-quarter of the world's population (United Nations Statistics, 2024). On a global scale, the number of adults who have experienced war and subsequently suffered from posttraumatic stress disorder (PTSD) has been remarkably high (Hoppen & Morina, 2019). Previous research has demonstrated that, among all types of traumatic events, exposure to war is associated with the greatest psychological burden in terms of both intensity and duration of suffering (Kessler et al., 2005). Systematic reviews further indicate that the prevalence of PTSD symptoms among war-affected civilian populations reaches 23.70%, while the prevalence of depressive symptoms amounts to 25.60%. Subgroup analyses by time elapsed since the onset of war and by national economic status reveal that the highest rates of both PTSD and depressive symptomatology are observed during the active phase of war and in low- and middle-income countries (Ahmed et al., 2024). Although approximately one-third of individuals recover

матичного зростання, що проявляється в посиленні соціальної солідарності та спільного смисловизначення в умовах колективного травматичного досвіду. **Висновки.** Посттравматичне зростання в умовах війни не є автоматичним наслідком травми, а формується за наявності індивідуальних і соціальних ресурсів та активного процесу осмислення пережитого досвіду. Узагальнення сучасних емпіричних даних поглиблює теоретичне розуміння цього феномену в контексті тривалого воєнного впливу та дозволяє окреслити актуальні напрями подальших досліджень, а саме необхідність майбутніх лонгітюдних досліджень, зокрема в українському контексті, для глибшого розуміння механізмів посттравматичного зростання у воєнний та післявоєнний періоди.

**Ключові слова:** посттравматичний стресовий розлад, внутрішньо переміщені особи, копінг-стратегії, соціальна підтримка, трансформація ідентичності, колективне посттравматичне зростання.

from PTSD within one year, rapid remission is least likely among those exposed to war-related trauma (Kessler et al., 2017).

The psychological consequences of the Russian-Ukrainian war have manifested in increased levels of anxiety, depression, PTSD, complex PTSD, and sleep disturbances among the adult population of Ukraine (Rizzi et al., 2022). According to data collected as of March 2022, 53% of Ukrainian adults demonstrated high levels of psychological distress, 54% reported anxiety symptoms, and 47% reported depressive symptoms (Lushchak et al., 2023). It has also been shown that forced internal displacement significantly increases the risk of developing PTSD and other mental disorders (Johnson et al., 2022).

War exerts a long-term impact on psychological development, particularly during childhood and adolescence. Research indicates that war exposure may exacerbate cognitive impairments, complicate emotional regulation, and reduce coping capacity. Traumatic events have been associated with impaired concentration, diminished self-confidence, memory deficits, reduced cognitive flexibility, and decreased creativity (Lerner et al., 2015). In addition to these

disturbances, the experience of war also affects individuals' temporal perspective. Significant traumatic exposure has been linked to shifts in the balance of time orientations, manifested in reduced orientation toward a positive past and deviations in future orientation from optimal levels (Plokhikh et al., 2025). At the same time, living under conditions of war may stimulate the development of psychological resilience by fostering adaptive capacity. In adverse life circumstances, individuals more frequently seek social support, cooperate with others, learn from personal experience, and make deliberate decisions – behavioral patterns characteristic of resilient individuals (Wessells, 2017).

Beyond the development of resilience, a considerable proportion of individuals report that overcoming traumatic events is accompanied by positive psychological changes, including increased maturity, wisdom, a stronger sense of meaning in life, and enhanced inner strength. In this context, posttraumatic growth (PTG) is conceptualized not merely as the capacity to withstand stress, but as a qualitative transformation that exceeds prior levels of functioning. As noted by researchers, PTG represents “a movement beyond pre-trauma levels of adaptation” (Tedeschi & Calhoun, 2004). Unlike resilience, PTG involves the development of new life perspectives, a deeper appreciation of life, and the strengthening of one's internal psychological potential (Hall et al., 2008).

The prevalence of posttraumatic growth varies considerably across different populations, particularly in war-affected regions, where social support and effective coping strategies play a crucial role (Werner, 2012). The development of PTG is not universal; rather, it is understood as a complex and dynamic process determined by multiple interacting factors, including the nature of trauma, personality characteristics, cognitive processing of experience, and external support resources (Joseph & Linley, 2005). Researchers emphasize that suffering and growth may coexist, with meaning-making serving as a central psychological mechanism in this process.

International research on PTG has been complemented by a growing number of Ukrainian empirical studies that account for the cultural, social, and historical specificities of experiencing

war. Between 2022 and 2025, a number of studies were published analyzing posttraumatic growth among military personnel, veterans, internally displaced persons, volunteers, and civilian populations in Ukraine. At the same time, these studies are characterized by substantial methodological and sampling heterogeneity, differences in approaches to measuring PTG, and limited generalizability of findings.

Thus, despite the growing number of empirical studies devoted to posttraumatic growth in the context of war, the problem of systematizing existing findings, identifying common trends, methodological limitations, and key research challenges in the context of ongoing military conflict remains insufficiently addressed.

**Research hypothesis.** Social support, sense of belonging, and transformation of social identity are conceptualized as key factors in the development of not only individual but also collective posttraumatic growth among populations experiencing prolonged military conflict.

**Aim of the review.** The aim of this review is to synthesize and analyze empirical studies on posttraumatic growth conducted during wartime between 2022 and 2025.

**Presentation of the main material.** Significant traumatic events, such as exposure to war, may lead to substantial psychological impairment in many affected individuals, including the development of persistent posttraumatic stress symptoms (Blackmore et al., 2020). At the same time, many people report that confronting a traumatic event and living through it contributed to positive changes in certain areas of their lives – so profound that their maturity, development, wisdom, or level of adaptation exceed the pre-war baseline. These positive changes have been conceptualized as posttraumatic growth (PTG). They may include a shift in priorities and a deeper appreciation of life, closer relationships with others, an enhanced sense of personal strength, recognition of new possible life paths, and spiritual development (Tedeschi & Calhoun, 2004).

PTG may be relatively prevalent: one meta-analytic study reported an average prevalence of 53% for moderate and high levels of PTG following various traumatic events (Wu et al., 2008). In

professional groups regularly exposed to stressful and traumatic events, including nurses, pooled estimates likewise indicate a moderate level of PTG ( $M = 55.69$ ; 95% CI: 50.67–60.72) (Wang et al., 2024). War-related traumatic events can also result in positive changes conceptualized as PTG. Substantial PTG has been documented among combat veterans (Greenberg et al., 2021; Whealin et al., 2020; Gower et al., 2024), among Holocaust survivors, among refugees in general (Pop et al., 2025), and, specifically, among refugees from Syria (Kangaslampi et al., 2022). At the same time, PTSD symptoms meeting diagnostic threshold were identified in 31.46% (95% CI: 24.43–38.50) of war-affected populations and among refugees (Blackmore et al., 2020).

It is important to emphasize that experiencing PTG does not imply that the traumatic event was beneficial overall, nor does it indicate an absence of suffering. The same individual may experience both distress (including PTSD symptoms) and growth – either simultaneously or at different periods following the traumatic event. PTG is more likely when affected individuals continue to think about, talk about, and attempt to make sense of the trauma – that is, when they engage in intensive cognitive processing (Goutaudier et al., 2020). Such processing is often accompanied by intrusive thoughts and the necessity of relinquishing goals and hopes that have become unattainable; therefore, it may be experienced as difficult and painful.

Indeed, meta-analyses across different trauma types have shown that greater PTSD symptom severity is associated with more pronounced PTG ( $r = .22-.33$ ) (Shakespeare-Finch & Lurie-Beck, 2014). However, this positive association may have boundaries: several recent studies among combat veterans and a meta-analysis of 63 studies across different trauma types (Liu et al., 2017) identified a curvilinear, inverted U-shaped relationship between PTG and PTSD (Jernslett et al., 2025). This suggests that PTG may be strongest at moderate levels of PTSD symptoms rather than at low or high levels. In contrast, some studies have found no positive association between PTSD and PTG (Goutaudier et al., 2020).

More recently, PTG has been conceptualized as a potential mechanism underlying behavioral

changes in conflict-affected individuals that previously posed interpretative challenges for researchers. For example, some studies argue that PTG may alter individual preferences regarding risk and time, as well as social preferences (Blackmore et al., 2020). However, most of these studies did not measure PTG directly. Studies that examined the actual impact of PTG in conflict-affected samples found, for instance, an association between PTG and hope (George-Levi et al., 2025), as well as empathy and altruism (Elam et al., 2025), and an influence on social behavior through the transformation of preferences (Skoog, 2023).

### **Materials and methods**

Between May 2025 and October 2025, a systematic literature review was conducted using the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Liberati et al., 2009; Moher et al., 2015; Page et al., 2020). This methodology was developed to ensure the systematic identification and analysis of scientific studies on a given topic through transparent and codified selection procedures.

The organization of the review included three key stages. The first stage involved planning, which comprised the development of the review protocol and formulation of research questions. The second stage consisted of conducting the review, including the selection of relevant studies, construction of the PRISMA flow diagram, and determination of methodological inclusion and exclusion criteria. The third stage involved synthesis and discussion of findings. At the synthesis stage, particular emphasis was placed on empirical data published between 2022 and 2025 during the Russian-Ukrainian war and the ongoing Israel-Hamas war (2023–2025). These studies examined the level and predictors of posttraumatic growth among different groups: internally displaced persons, mental health professionals, civilian populations across various age groups, and pregnant women. Special attention was devoted to the concept of collective posttraumatic growth, which has gained particular relevance in the context of national wartime experience.

To address the research questions, a bibliographic search was conducted in three scientific databases: Scopus, PubMed, and Google Scholar.

**Inclusion criteria.** The review focused on studies providing empirical data on manifestations of posttraumatic growth in the context of war during the period 2022–2025. Studies were selected according to the following criteria:

- inclusion of participant samples directly involved in or affected by war (internally displaced persons, civilian populations, mental health professionals);
- inclusion of publications containing empirical data obtained through quantitative, qualitative, or mixed methods, provided that the findings directly addressed indicators or predictors of posttraumatic growth;
- consideration of studies analyzing both individual-level PTG (personal strength, new possibilities, deepened interpersonal relationships, appreciation of life, spiritual or existential development) and collective-level PTG (posttraumatic solidarity, sense of unity, patriotism, or trust in governmental decisions);
- inclusion of empirical and applied research only;
- inclusion of articles published in peer-reviewed academic journals.

Dissertations, reports, conference proceedings, books, book chapters, and other forms of non-peer-reviewed literature were excluded.

**Search strategy.** During the development of the search strategy, various keyword combinations were used, including: “posttraumatic growth: empirical review”, “posttraumatic growth during war”, “collective posttraumatic growth”, “factors of posttraumatic growth”.

**Study selection and quality assessment.** The search conducted in the Scopus, PubMed, and Google Scholar databases identified 137 publications. After removing four duplicates, 133 studies proceeded to the screening stage. During the initial screening based on titles and abstracts, 93 publications were excluded. Forty full-text articles were assessed for eligibility; however, four full texts could not be retrieved due to access limitations. Thus, 36 studies were evaluated for compliance with the inclusion criteria. Following full-text analysis, 20 articles were excluded for the following reasons: lack of primary data ( $n = 9$ ) and irrelevance to the research topic ( $n = 7$ ).

Ultimately, 16 studies with current and high-quality primary empirical data were included in the systematic review and were deemed suitable for evidence synthesis and for addressing the research questions. The full selection process is systematically illustrated in Figure.

Following the study selection procedure, 16 studies published between 2022 and 2025 were included in the final analysis. The geographical scope of the included studies reflects both contemporary military contexts – namely, the Russian-Ukrainian war (2022–2025), the Israel-Hamas war (2023–2025), and the Syrian conflict (2011–2025) as well as earlier armed hostilities, specifically the Iran-Iraq war (1980–1988), examined through extended longitudinal follow-up.

The age range of participants across the analyzed studies varied from 10 to 74 years. One study focused exclusively on an adolescent sample, allowing for a detailed examination of age-specific experiences during this developmental period. Another study concentrated on a sample of pregnant women, taking into account the specific psychological conditions and vulnerabilities associated with pregnancy.

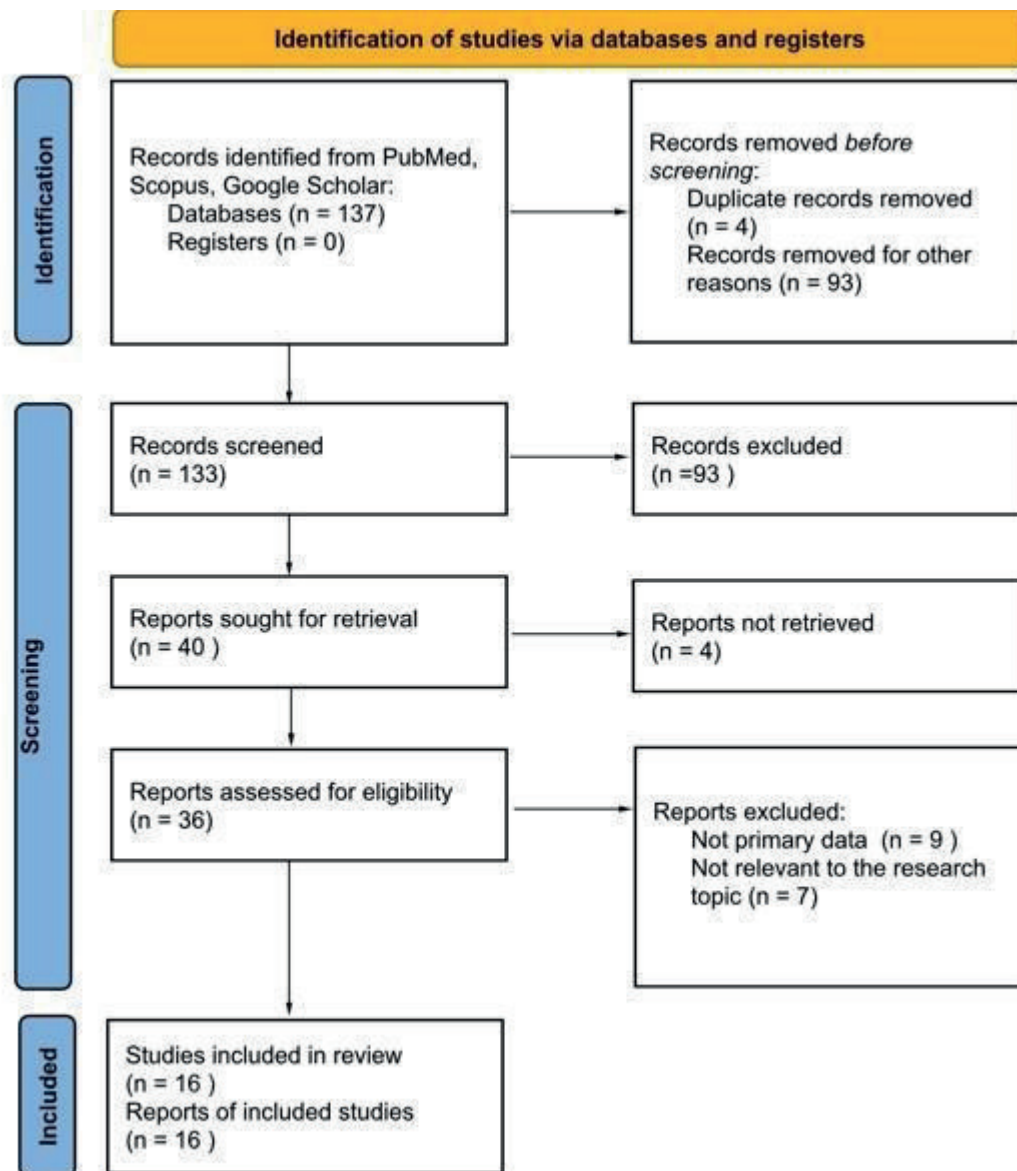


Fig. 1. PRISMA flow diagram of the search and screening process

## Results

The included studies were aimed at analyzing the levels and predictors of posttraumatic growth across various population groups, including internally displaced persons, helping professionals, civilian populations of different age categories, and pregnant women. Age, social support, self-identity, and sense of belonging, as well as adaptive coping strategies, were identified as factors associated with PTG.

**Demographic variables.** Age was examined as a moderating factor of posttraumatic growth in several studies (Banit, 2023; Mijalevich-

Soker et al., 2025; Skoog, 2023). Indicators of posttraumatic growth demonstrate associations with developmental processes. A positive correlation was observed between age and appreciation of life, as well as deepening of positive attitudes toward others. Younger adolescents demonstrated low levels of posttraumatic growth, whereas older adolescents and young adults exhibited moderate levels (Kuzikova et al., 2025). With increasing age, the interaction between indicators of personal strength and the ability to perceive new opportunities in stressful situations becomes more complex (Banit, 2023).

Variables associated with PTG

***Posttraumatic stress disorder (PTSD).***

Research confirms an inverse correlation between indicators of posttraumatic growth (PTG) and PTSD: the higher the level of PTG, the lower the severity of symptoms of intrusion, avoidance, hyperarousal, and guilt. In the group with a high level of PTG, a significant proportion of individuals did not exhibit signs of clinical PTSD, whereas in the group with low PTG, all participants demonstrated PTSD symptoms, with nearly 40% meeting criteria for a clinically diagnosed disorder. This makes it possible to consider PTG as an antipode of PTSD and as a potential mechanism for preventing its development (Belov et al., 2025).

***Depression.*** Depressive symptoms function as a negative predictor of posttraumatic growth. It was established that students with low levels of PTG had significantly higher depression scores ( $49.08 \pm 11.51$  points) compared to those with high PTG ( $42.17 \pm 9.81$  points;  $p < 0.0001$ ). Correlation analysis confirmed a moderate inverse association ( $r_s = -0.307$ ), indicating a relationship between depressive manifestations and inhibition of personal growth processes. A heightened sense of guilt and personal inadequacy reduces the capacity to integrate crisis into a positive experience, whereas lower levels of depression are associated with greater appreciation of life and strengthening of personal resources (Belov et al., 2025).

**Coping styles and strategies. Cognitive coping**

***Rumination.*** Rumination is considered an ambivalent process, as it can both intensify emotional distress and create conditions for deeper cognitive processing of traumatic experience, which, under certain conditions, contributes to the development of posttraumatic growth. Research indicates that the transition from intrusive repetitive thoughts to reflective rumination increases the capacity for meaning-making and opens opportunities to construct new life perspectives. Authors emphasize that rumination may support the process of value reappraisal and

strengthening of internal resources, provided that traumatic experiences are gradually cognitively processed without fixation on

distress. At the same time, excessive and uncontrolled rumination is associated with decreased adaptability and delayed development of posttraumatic growth, as confirmed in studies conducted on migration samples (Hashemi & Mahmoudzadeh, 2025).

***Problem-focused coping.*** Problem-focused coping promotes posttraumatic growth by increasing the sense of control, efficacy, and ability to act under conditions of uncertainty. Active problem solving and action orientation create conditions for identifying new opportunities and strengthening personal power – key components of PTG. Orientation toward achieving specific outcomes reduces feelings of helplessness and supports more stable post-trauma adaptation. Research also shows that active strategies enhance the ability to reorganize life priorities, reinforcing autonomy and internal resources. Conversely, the absence of problem-focused coping is associated with lower PTG, as it maintains passive and maladaptive response patterns (Belov, 2025).

***Emotion-focused coping.*** In studies of internally displaced persons, emotion-focused coping is regarded as an important mechanism facilitating posttraumatic growth, particularly when external circumstances are uncontrollable. Seeking support and emotional expression help integrate experiences of loss and lay the groundwork for a positive reappraisal of the situation, as confirmed by systematic review data. Some studies indicate that emotional strategies may enhance meaning-making capacity, which is a key catalyst of personal change after trauma. Authors analyzing forced displacement emphasize that openness to emotional experience contributes to better awareness of new opportunities and strengthening of internal resources. In contrast, avoidance or “emotional stagnation” is associated with reduced likelihood of PTG, as highlighted in migration samples (Volkov, 2025; Hashemi & Mahmoudzadeh, 2025).

***Hope.*** Hope acts as a stable protective factor associated with reduced levels of psychological stress, regardless of the intensity of secondary traumatization symptoms. It performs a regulatory function, supporting preservation of internal psychological resources, goal-directed behavior, and a subjective sense of control under

conditions of collective trauma. Unlike meaning-making related to professional activity, hope has a more universal protective potential independent of professional context. Its presence is associated with higher levels of psychological resilience and the capacity to withstand emotional exhaustion. Thus, hope constitutes an important psychological resource supporting adaptation and posttraumatic growth even under high levels of professional stress (George-Levi et al., 2025).

In the temporal dimension, hope is directly related to future orientation and the capacity to maintain the future as a psychologically accessible and meaningful planning horizon. Within time perspective theory, future orientation is conceptualized as a cognitive-motivational set that ensures goal setting, delayed gratification, and strategic planning. Traumatic war experiences may disrupt the balance of temporal orientations, leading to dominance of negatively valenced past orientation (past negative) and fatalistic present orientation (present fatalistic), accompanied by narrowing of future perspective and loss of subjective control. Empirical data indicate that individuals with traumatic experience demonstrate deviations from a balanced time perspective, particularly decreased future orientation and reduced positive perception of the past (Plokhikh et al., 2025). Such changes are associated with reduction of long-term life goals and diminished expectations of positive change. In this context, hope functions as a regulator of temporal perspective, restoring future orientation, facilitating reconstruction of life plans, and supporting integration of traumatic experience into a coherent life narrative. Thus, hope may be considered a psychological mechanism that brings the structure of temporal orientations closer to a balanced model, reducing the dominance of maladaptive components (past negative, present fatalistic) and strengthening future orientation. Expanding temporal perspective, it creates cognitive preconditions for the development of posttraumatic growth.

**Social support.** Social support has proven to be a key factor in mitigating the negative impact of trauma and stress on mental and physical health, facilitating recovery and adaptation. Respondents who demonstrated effective communication

and problem-solving abilities emphasized the importance of interpersonal connections in the process of posttraumatic growth (Hashemi & Mahmoudzadeh, 2025; Mijalevich-Soker, 2025). Authors note that social support is one of the most important predictors of PTG, as it ensures emotional ventilation, normalization of experiences, and a sense of belonging to a safe community (Dahan, 2024).

**Identity and sense of belonging.** The results indicate that posttraumatic growth may develop through the transformation of social identities or the activation of existing identification resources. Such activation is manifested in renewed awareness of the significance of one's social affiliations, strengthening of perceived group resources, and increased subjective value of group membership for the individual. Traumatic experience, particularly war-related trauma, can alter a person's perception of self and place within the social space, making processes of social identity important mediators between experienced trauma and positive posttraumatic changes. Rather than social alienation, personal and social (including military) identities formed or strengthened during war may stimulate the desire to restore and deepen social ties, thereby reinforcing collective identity. Integration of group belonging into the individual's self-concept creates conditions for reinterpreting life meanings and values, enabling posttraumatic growth through revitalization of the social "self" (Zlyvkov & Lukomska, 2023).

**Collective posttraumatic growth (CPTG).** Summarizing research findings, posttraumatic growth extends beyond the individual level and may manifest as a collective phenomenon in response to mass trauma. Empirical data on increases in national resilience during war indicate the presence of collective posttraumatic growth, manifested in enhanced social solidarity, institutional trust, and sense of unity (Eshel et al., 2025). A systematic review of collective violence research complements these findings, demonstrating that collective and individual meaning-making, interpersonal resources, and regulatory strategies constitute key mechanisms of perceived posttraumatic growth. Broader contextual factors, including access to education

and employment, development of sanitary infrastructure, and general economic and political conditions, also contribute to the formation of CPTG (Brooks et al., 2025; Kahraman & Kina, 2024).

### **Discussion**

The findings of this systematic review indicate that posttraumatic growth (PTG) is not a direct or proportional consequence of traumatic exposure but rather emerges as a nonlinear process mediated by cognitive processing of trauma, individual psychological resources, and social conditions. Within the framework of contemporary process-oriented and integrative models of PTG, the results suggest a fluctuating trajectory of growth that may coexist with symptoms of posttraumatic stress disorder (PTSD) and depression, thereby supporting the dialectical nature of adaptation to trauma. The observed inverse association between PTG and the severity of PTSD and depressive symptoms is generally consistent with prior empirical evidence; however, the cumulative findings also support the notion of a curvilinear relationship between these variables. A moderate level of posttraumatic stress may function as a catalyst for cognitive processing of trauma, whereas either excessive or minimal symptomatology appears to constrain meaning-making processes. Thus, PTG should not be conceptualized as an automatic byproduct of symptom reduction but rather as an outcome of active psychological processing and integration of traumatic experience.

Cognitive processing of trauma, particularly rumination, emerges as a key mechanism underlying posttraumatic growth. The review data confirm its functional ambivalence (see Table): while intrusive rumination sustains distress and reinforces traumatic fixation, deliberate (reflective) rumination facilitates meaning-making, integration of loss, and transformation of life perspectives. This is consistent with cognitive processing models of trauma, according to which the adaptive potential following traumatic exposure depends on the quality, rather than the mere intensity, of cognitive activity (Mertens et al., 2025; Allen et al., 2022).

Adaptive coping strategies, specifically

problem-focused and emotion-focused coping (see Table), demonstrate a stable positive association with PTG. Problem-focused coping contributes to the restoration of perceived control and self-efficacy, whereas emotion-focused strategies, when characterized by openness to emotional experience, support the integration of losses into a coherent life narrative. In contrast, avoidance coping is associated with lower levels of PTG, likely due to the inhibition of cognitive processing mechanisms necessary for trauma integration (Xie & Kim, 2022).

Among personal resources, hope emerges as a universal protective factor in the development of posttraumatic growth (see Table). Unlike meaning-making processes or identity-based professional resources, its adaptive potential appears to remain stable across social and occupational contexts, sustaining goal-directed behavior and subjective control under conditions of chronic uncertainty (Long, 2022; Senger et al., 2023). This positions hope as one of the central psychological mechanisms supporting PTG in the context of prolonged armed conflict.

The review findings further underscore the central role of social support and social identification processes in fostering both individual and collective posttraumatic growth. A sense of belonging, emotional validation, and the integration of group membership into the self-concept create favorable conditions for positive psychological transformation in the context of collective traumatic experience associated with war (Eshel et al., 2025). Within this framework, the phenomenon of collective posttraumatic growth extends beyond individualistic models of PTG, demonstrating that growth may manifest at the community level through strengthened social solidarity, institutional trust, and processes of shared meaning-making.

**Table 1.** Factors and psychological mechanisms of posttraumatic growth in the context of war

<b>Variables</b>	<b>Specific variables / processes</b>	<b>Nature of influence on PTG</b>	<b>Explanation / mechanism of action</b>
Posttraumatic stress disorder (PTSD)	Intrusion symptoms, avoidance, hyperarousal, guilt	Curvilinear	A moderate level of PTSD activates cognitive processing; excessive or minimal levels inhibit PTG development
Depression	Feelings of guilt; hopelessness; loss of interest in life; feelings of inadequacy	Negative	Depressive manifestations reduce meaning-making capacity and motivation to integrate traumatic experience
Cognitive processing	Meaning-making of traumatic experience; reappraisal of values; reconstruction of life narrative	Key component in trauma integration	Ensures integration of traumatic experience into a new life narrative
Rumination	Intrusive rumination	Negative (intrusive)	Intrusive rumination maintains trauma fixation and distress
	Reflective rumination	Positive (reflective)	Reflective rumination facilitates meaning-making and development of new life perspectives
Coping strategies	Problem-focused coping	Positive	Enhances the sense of control and personal strength
	Emotion-focused coping	Positive	Facilitates integration of losses and positive reappraisal
	Avoidance	Negative	Blocks cognitive processing
Personal resources	Hope	Positive	Supports goal-directedness and subjective control
	Self-efficacy	Positive	Promotes active coping
Social factors	Social support	Positive	Normalization of experiences and sense of belonging
	Integration	Positive	

Identity	Sense of belonging	Positive	Restoration of perceived safety
	Identity transformation	Positive	Supports identity coherence
Demographic variables	Age	Moderating	Integration of traumatic experience as a developmental resource
	Gender	Moderating	With age reflective capacity increases Women more frequently report higher PTG levels
Macrosocial factors	Social solidarity, trust in institutions	Positive	Strengthens collective posttraumatic growth

**Strengths and limitations.** This systematic review makes a significant contribution to the study of posttraumatic growth in the context of ongoing armed conflict by synthesizing current empirical evidence from 2022–2025, with particular attention to contemporary wars, especially the Russian-Ukrainian war. A major strength of the review lies in the integration of both individual and collective levels of PTG, as well as in the methodological transparency of the selection process, which complied with PRISMA guidelines. Additionally, the comprehensive analytical approach, which combines individual, social, and macrosocial levels of adaptation to trauma, enhances the theoretical depth of the review. At the same time, several limitations should be acknowledged. First, the studies included in the review differ substantially in research design, sample characteristics, and measurement instruments used to assess posttraumatic growth, which complicates direct comparisons of findings and limits the generalizability of conclusions. Second, despite the inclusion of Ukrainian samples, the empirical base concerning internally displaced persons in Ukraine remains limited, particularly from a longitudinal perspective. Finally, the review focuses primarily on positive

transformations without a symmetrical analysis of negative posttraumatic changes (e.g., posttraumatic depreciation), which may introduce a conceptual bias in the interpretation of trauma adaptation processes.

### Conclusions

The conducted systematic review of empirical studies from 2022–2025 demonstrates that posttraumatic growth in the context of war is a multidimensional, dynamic, and contextually conditioned process shaped by the interaction of individual, social, and macrosocial factors. The findings confirm that PTG is not an automatic consequence of traumatic exposure but emerges under conditions of active cognitive processing, the presence of personal psychological resources, supportive social environments, and opportunities to integrate traumatic experience into a renewed life narrative. At the same time, symptoms of PTSD and depression may both stimulate and inhibit the process of growth, supporting the complex, particularly curvilinear nature of their association with PTG.

The review results suggest that cognitive mechanisms of trauma meaning-making play a pivotal role in the development of posttraumatic

growth, particularly the transition from intrusive to deliberate rumination, as well as the use of adaptive coping strategies, problem-focused, and emotion-focused coping. Significant contributing factors also include hope, self-efficacy, social support, and a sense of belonging, all of which provide psychological grounding and facilitate identity transformation following traumatic experience. Special attention should be given to the phenomenon of collective posttraumatic growth, manifested in strengthened social solidarity, increased institutional trust, and shared meaning-making processes in the context of prolonged armed confrontation.

A promising direction for future research involves a deeper examination of the temporal dynamics of posttraumatic growth, particularly in the context of forced migration and identity transformation. Specifically, longitudinal empirical studies among internally displaced persons in Ukraine are urgently needed to trace the development of PTG across different stages of war and in the postwar period. Further research should focus on cognitive processing mechanisms, identity transformation, and the role of social and macrosocial determinants in shaping both individual and collective posttraumatic growth.

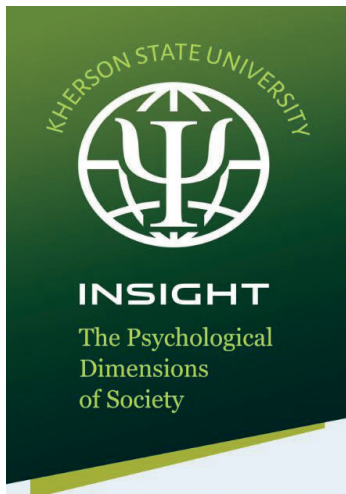
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**Social Psychology;  
Psychology of Social  
Work**

**Соціальна психологія;  
Психологія соціальної  
роботи**

## **Perception of Female Video Game Characters in Relation to Gender Stereotypes and Sexism**

### **Сприйняття жіночих персонажів відеоігор у контексті гендерних стереотипів та сексизму**

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#### **Abstract**

**The aim** of this study was to investigate how individuals engage with games and whether their views reflect or challenge gender stereotypes. We examined opinions about female characters appearing in currently published popular video games using the ideological systems of old-fashioned and modern sexism. **Methods.** The study was conducted on a sample of 15, using a one-on-one interview design. Sexism scores were assessed by using the Old-Fashioned and Modern Sexism Scale, which contains 10 questions, measuring both overt and covert manifestations of sexist thinking. Individuals watched 5-minute videos featuring female characters ( $n = 8$ ) and chose 5 out of 40 personality traits and then explained their choices in a few sentences. Traits were carefully chosen based on stereotypes about men (e.g., brave, aggressive) and women (e.g., sensitive, romantic). The list also contained neutral traits (e.g., intelligent, stingy). Participants also scored characters' physical traits and likability. Content analysis was performed on participants' answers, which determined whether they contained infor-

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#### **Анотація**

**Метою** цього дослідження було з'ясувати, як люди ставляться до ігор і чи відображають їхні погляди гендерні стереотипи або ж суперечать їм. Досліджено думки про жіночих персонажів, що з'являються в популярних відеоіграх, які виходять зараз, використовуючи ідеологічні системи старомодного та сучасного сексизму. **Методи.** Дослідження проведено на вибірці з 15 осіб, використовуючи формат індивідуальних інтерв'ю. Сексизм оцінено за допомогою шкали старомодного та сучасного сексизму, що містить 10 питань і вимірює як явні, так і приховані прояви сексистського мислення. Учасники переглянули 5-хвилинні відеоролики з жіночими персонажами ( $n = 8$ ) і вибрали 5 із 40 рис характеру, а потім пояснили свій вибір кількома реченнями. Риси були ретельно підібрані на основі стереотипів щодо чоловіків (наприклад, сміливий, агресивний) і жінок (наприклад, чутлива, романтична). Список також містив нейтральні риси (наприклад, розумний, скупий). Учасники також оцінювали фізичні риси персонажів та їхню привабливість. Проведено контент-аналіз відповідей учасників, який визначив, чи містять вони ін-

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mation linked to gender stereotypes. Statistical analysis featured T-tests and correlation matrices to assess how individuals view female characters and whether sexist attitudes influence the perception of physical traits, personality, and in-game roles. **Results.** Based on the findings, modern sexist views were more prevalent in the sample ( $p = .002$ ) for female and male participants alike. Character descriptions were most likely influenced by gender stereotypes rather than sexism, as no clear correlation was found. Higher adherence to beauty standards was associated with greater sympathy ( $p = .034$ ;  $r_s = .55$ ) but did not correlate with perceived story relevance. Assigned traits were majority masculine ( $n = 9$ ), which differs from past studies' findings. **Conclusion.** Our findings conclude that female characters in today's video games deviate from pre-established stereotypical gender representations, with appearance not being the primary factor in forming opinions about sympathy or plot relevance. Results indicate that the connections between sexist views and opinions regarding female characters are currently ambiguous and would benefit from further studies.

**Keywords:** female representation, video games, old-fashioned sexism, modern sexism, beauty standards.

### Introduction

In our current society, the influence of digital media is present in all aspects of life. We talk to our friends online, we read the news on our phones, and we watch videos or play video games to relax at the end of a long day.

**The Impact of Video Games.** Despite their relative infancy compared to more established entertainment media, such as film and television, video games have a considerable impact on pop culture and society and therefore warrant a critical analysis of the sociological effects that the representation of female characters has had and may continue to have going forward.

According to 2022 data from the European Commission, over 50% of Europeans (237 million people) play video games regularly, and that number continues to grow each year. In terms of

формацію, пов'язану з гендерними стереотипами. Статистичний аналіз включав Т-тести та кореляційні матриці для оцінки того, як люди сприймають жіночих персонажів і чи впливають сексистські погляди на сприйняття фізичних рис, особистості та ролей у грі. **Результати.** На основі отриманих даних встановлено, що сучасні сексистські погляди були більш поширеними в вибірці ( $p = .002$ ) як серед жінок, так і серед чоловіків. Описи персонажів, найімовірніше, були під впливом гендерних стереотипів, але не сексизму, оскільки чіткої кореляції виявлено не було. Більша відповідність стандартам краси призводила до більшої симпатії ( $p = .034$ ;  $r_s = .55$ ), але не корелювала зі сприйняттям релевантності сюжету. Присвоєні риси були переважно чоловічими ( $n = 9$ ), що відрізняється від результатів попередніх досліджень. **Висновок.** Наші висновки свідчать, що жіночі персонажі в сучасних відеоіграх відхиляються від заздалегідь установлених стереотипних уявлень про гендер, а зовнішність не є основним фактором при формуванні думки про симпатію або релевантність сюжету. Результати показують, що зв'язки між сексистськими поглядами та думками щодо жіночих персонажів наразі є неоднозначними і потребують подальшого дослідження.

**Ключові слова:** жіноче уявлення, відеоігри, старомодний сексизм, сучасний сексизм, стандарти краси.

the gender of the player base, data from the EU and the US show that male and female players' quantity and involvement are around equal (Entertainment Software Association, 2021; European Commission, 2023), although they usually prefer different genres of games (Liu, 2024; Rehbein et al., 2016).

**Psychological Effects of Video Game Usage.** Jansz (2005) hypothesized that playing a video game requires critical thinking because the player must be familiar with the game's mechanics and story to progress. This differentiates video games from films and traditional television because these types of media continue even without our input or attention; therefore, we can just let them run as background noise while we do other things. Video games uniquely influence our thinking because we have to participate actively. Players can immerse

themselves in the world and drive the game's story with their decisions often affecting how the game concludes (Jansz, 2005).

Furthermore, they might form stronger attachments to the characters in games because they interact with them more frequently and engage with their stories for longer periods, with the average playtime of an AAA game being around fifteen hours (Geek Culture, 2020; Jansz, 2005). These characteristics of video games are important to assess when considering their psychological impact. In this sense, video games offer a more personalized and immersive experience than passively watching a film or TV series (Jansz, 2005). This effect has only become more pronounced since Jansz's study found that many people watch television/videos while looking at other screens e.g., messaging their friends or browsing social media on their phone (Segijn et al., 2017).

Various theories exist about how digital entertainment affects our attitudes about gender representation and gender roles. Bandura's Social Learning Theory (2001) presents the idea that others serve as models while children are learning to socialize, which could be comparable to characters featured in digital media as well (Bègue et al., 2017) This idea was backed by Gerbner's Cultivation Theory (1999), arguing that prolonged consumption of media may alter an individual's perception of reality. As a result, the consumer's perceptions of social scenarios begin to converge with media representations, even if those representations and experiences are far from objective reality (Gerbner, 1999). Cultivation Theory has been thoroughly researched in the past, producing varying results, especially with the ever-changing state of media and online algorithms (Hermann et al., 2023; Turel, 2024).

Since it is common to come across sexualized and repressed female representations in media, interactions with them could also influence our attitudes towards gender ideologies. This could reinforce traditional gender roles and sexism; a connection that has been established in Fredrickson & Roberts' 1997 study, although sufficient data argue against this claim (Cross et al., 2024; Ferguson et al., 2022).

It is important to note that the way one reacts

to messages seen in digital media is mediated by various characteristics, such as age, socioeconomic status, sexual identity, and other personal traits. To conclude, regularly interacting with sexualized representations can have a negative impact on women's self-perception and mental health (Barlett & Harris, 2008; Fredrickson & Roberts, 1997), but short-term exposure can be mediated by other factors (Cross et al., 2024; Sarda et al., 2022)

***Old-fashioned and Modern Sexism.*** With sexism being a multi-faceted ideology, we need to differentiate between various forms of sexism, which led many social scientists to create their own definitions. Swim et al. (1995) defined old-fashioned and modern sexism, with old-fashioned sexism encompassing more aggressive forms of sexism, such as propagating negative stereotypes about women or outright discrimination e.g., denying women's right to vote.

On the other hand, modern sexist ideology is characterized by the illusion of equality (Swim et al., 1995). This belief states that regulations ensuring women's inclusion in all facets of society or further advocating for women's rights are unnecessary because women are already equal to men in most parts of the world. This ideology also raises the idea that women do not face discrimination in our society anymore. Inequalities between men and women (e.g., the wage gap or persisting negative stereotypes) stem from individual shortcomings rather than from systematic beliefs hindering women's progression (Szabó, 2008). Individuals with this belief may disapprove of women's success in the workplace or initiatives that aim to increase women's involvement across all fields of society, especially politics, with a primary example being gender quotas in the Parliament (Krivoshchekov et al., 2023; Swim et al., 1995).

In summation, old-fashioned sexism perpetuates the idea that men and women should stay unequal and stick to traditional, rigid roles. At the same time, modern sexist ideology chooses to ignore the psychological influences and biases that are still present in people's cognition, therefore making women's progression for actual equality difficult (Doolard et al., 2022; Krivoshchekov et al., 2023; Off et al., 2022).

Whether video games can perpetuate sexist behavior is unclear. This is a much less investigated topic with a small quantity of studies seeking evidence about how they might correlate, with certain studies supporting the claim (e.g., Bègue et al., 2017; Stremer & Burkley, 2015) while others finding the relation insufficient (e.g., Cross et al., 2024; Ferguson et al., 2022). Regardless, we must pay attention to the quality of representations players encounter frequently while engaging with games, as these may influence how they perceive their surroundings and navigate social situations (Bègue et al., 2017; Hermann et al., 2023).

### ***Female Representations in Video Games.***

The first significant study in the field of female representation in games was conducted by Dietz (1998), which focused on gender roles and the depiction of violence, including interactions between the two. The findings were quite shocking: 43% of the games had no female characters. Where female characters were present, they were usually seen as sexual objects (28%) or stuck in other disadvantageous situations, waiting for a male hero to save them (21%). Females as heroes were present in only five games, which was 15% of the total games analysed (Dietz, 1998).

In terms of physical appearance and clothing, female characters were often depicted as stereotypically feminine. More than one-fourth of the games featured violence as a core element of the story, with violence directed at female characters in 21% of the analyzed games (Dietz, 1998).

Others have yielded comparable results. B. Beasley and T. Standley (2002) studied forty-seven games, further strengthening Dietz's findings. Burgess et al. (2007) analyzed 225 console games in a manner similar to the previously mentioned authors. Video games featuring female characters have increased considerably (47%); however, the quality of representation has not shown significant changes (Burgess et al., 2007).

***The Changing State of Female Representation.*** T. Lynch et al. (2016) decided to further analyze video games released between 1983 and 2014. Their primary focus was on the degree of sexualization for female characters and how these representations changed over time. They inspected characters' clothing, body types

and proportions, e.g., unnaturally large busts and buttocks. Sexual or suggestive behaviours were measured as well. The featured games (571) were categorized by four time periods based on when they were released. Their results were as follows: characters released between 2007 and 2014 were less sexualized than earlier games and the most sexualized characters appeared around the 2000s. Games from the second (1992–1998) and the third (1999–2006) period featured the most sexualized characters. These characters were designed to have unrealistic body proportions and wear a minimal amount of clothing (Lynch et al., 2016). It is important to mention that graphics were much less defined in the early days of video game production than they are now. Therefore, character models were also simpler, leading developers to make vastly different character design choices compared to current industry processes (Wang & Zhong, 2024).

Today's video games are being designed to be more realistic every single year, and technology is advancing at an incredible speed (Lynch et al., 2016; Wang & Zhong, 2024). This prompted T. Lynch et al. (2016) to conduct a similar study in 2024, which yielded comparable results. They proposed that sexist views may influence the portrayal of women in video games by showing them in stereotypical roles and limiting the diversity of physical characteristics to follow beauty standards (Lynch et al., 2024). These findings were supported by Sanz-Marcos & Meléndez González-Haba (2025), who analyzed sports-related video games.

Meanwhile, other recent studies suggest (Allen, 2024; Devčić & Sabol, 2024) that female characters are gradually becoming to be less sexualized, which is a welcome change.

Taking the previously detailed findings into account, we must pay attention to how players interact with female characters in video games, especially considering the constantly growing number of female video game players (Rodríguez-Barcenilla & Ortega-Mohedano, 2022) and the increasing demand for diverse representation across entertainment media (De la Torre-Sierra & Guichot-Reina, 2025; Denia et al., 2026; Lynch et al., 2025; Philips, 2025). This is perfectly illustrated by Steam, an online store for digital

software featuring a platform for players to discuss and review video games. The site's "female protagonist" tag appears on over 14,000 games (as of September 12, 2025) in their vast game library, ready to be downloaded and enjoyed by players all over the world.

**Aim.** This study's main goal is to provide a closer look into the player's mind: how they perceive female characters in games, how they form opinions about them, and to provide context in this newly forming area of research.

**Hypotheses.** Since modern sexism is a more covert form of sexist beliefs, we hypothesized that participants are more likely to subscribe to these ideas.

H<sub>1</sub>: Modern sexism compared to old-fashioned sexism is more prevalent in the sample.

While prior findings show that sexist attitudes are more prevalent in men, women are also likely to hold modern sexist beliefs (Watkins et al., 2006).

H<sub>2</sub>: Men and women show similar rates of modern sexism.

The rest of our hypotheses seek to establish connections between sexist views and perceptions of female video game characters based on currently available findings (e.g., Lynch et al., 2016). Connections between sexism, sympathy, and story relevance are based on Swim's Theory of Old-fashioned and Modern Sexism (Swim et al., 1995).

H<sub>3</sub>: Higher rates of sexism correlate with a higher chance of choosing traditionally feminine traits when describing characters.

H<sub>4</sub>: An individual with higher rates of sexism is more likely to sympathize with stereotypically feminine characters and less likely to sympathize with stereotypically masculine characters.

H<sub>5a</sub>: Characters that fit into traditional beauty standards are more likely to be perceived as more sympathetic.

H<sub>5b</sub>: Characters that fit into traditional beauty standards are more likely to be perceived as less important to the story.

H<sub>6</sub>: The quality of traits (feminine/masculine/neutral) assigned to characters matches the quality of descriptions given by the individual.

## **Methods**

**Participants.** The study was conducted with Hungarian participants aged 18 or older who were proficient in English (minimum B2 level).

The sample consisted of 15 participants: 9 women (60%) and 6 men (40%) aged 19 to 22, with an average age of 20.93 years (SD = .96).

Recruitment began in November 2023 by sharing the link to the online document containing the study description and the consent form on Facebook. Later, the individuals who participated in the study also shared the link on Facebook.

The requirements for participation in the study were being at least 18 years of age and being proficient in English, since the research materials were in English.

Willing participants completed the consent form and submitted their email addresses. All 22 people who filled out the consent form received an email to arrange an online interview. With 18 people responding to our interview invitation and some applicants cancelling their appointments, we ended up with a sample of 15 participants.

**Variables.** The main dependent variables were as follows: a character's (1) assigned traits; (2) trait description; (3) sympathy; (4) story relevance; (5) adherence to beauty standards.

Grouping variables: gender, old-fashioned and modern sexism scores. The variables were operationalized using appropriate scales, which made it possible to measure the intensity of sexist views. Character descriptions were quantified through content analysis.

**Procedures and Instruments.** Volunteering participants were interviewed online, each interview lasting 1.5 to 2 hours. The interview process went as follows: (1) The participant stated their age and gender. (2) The statements of Swim's Old-Fashioned and Modern Sexism Scale were read out and the participant answered to what extent they agreed with them. (3) A brief description (1–2 minutes) was given about one of the four video games included in the study. (4) The participant then watched a 5-minute video about one of the characters in the game described. (5) Any follow-up questions about context or the character were answered. (6) The participant assigned exactly five traits to the character they had seen using the Character Analysis Questionnaire

## Perception of Female Video Game Characters in Relation to Gender Stereotypes and Sexism



and briefly described the reasons behind each of their choices. (7) The participant answered the three follow-up questions about the character’s appearance, perceived sympathy, and importance in the story. (8) These steps were repeated with the remaining three video games, describing eight female characters in total throughout the interview process. The conversation was audio-recorded, to which the participants gave their written consent when filling out the consent form.

**Content Analysis.** The audio recordings were transcribed and evaluated through content analysis by a male and a female coder, who independently scored the participants’ responses. The analysis determined the extent to which the answer was feminine or masculine in quality. This meant the extent to which the response was perceived to fit into stereotypically feminine or masculine roles. Scoring was done using a Likert scale ranging from 1 to 5, with 1 meaning “not at all” and 5 meaning “completely”.

**Procedures and Instruments.** 1. *Hungarian version of the Old-fashioned and Modern Sexism Scale* (Swim et al., 1995), which was derived from the doctoral dissertation of Mónika Szabó (2008). It measures two factors, old-fashioned and modern sexism as defined by Swim et al. (1995), both with five items. The items are statements, and the participant responds to what extent they

agree with the contents on a Likert scale ranging from 1 to 5, where 1 means “I disagree completely” and 5 means “I agree completely”. The higher the number, the greater the degree of sexism we can conclude, except in the case of statements 2, 4 and 7, as these are reversed items; a higher value indicates lower sexism. By summing the scores, we obtained the total sexism score, which ranged from 10 to 50. The questionnaire demonstrated sufficient reliability in our study (Cronbach  $\alpha = .465$ ).

2. *5-minute videos of each female character* (n = 8). Videos were edited together from publicly available content online. Scene selection was carefully based on the following guidelines: scenes are featured from throughout the game, preferably including the first and last scene, where each character can be seen or interacted with. The featured scenes should follow each other in order. Participants should be able to identify each character’s motives, relationships, and overall character development. Table 1 lists the games and characters featured in this study (see Table 1).

Since the featured games had English voiceovers and most did not have an official Hungarian translation at the time of this study, we decided to add English subtitles to avoid mistranslations.

**Table 1.** Titles of featured games (in bold), pictures and names of featured characters

<b>Death Stranding</b>		<b>Detroit: Become Human</b>		<b>Ghost of Tsushima</b>		<b>Sekiro: Shadows Die Twice</b>	
							
Amelie	Fragile	Amanda	Kara	Tomoe	Yuna	Divine Child	Emma

3. *The Character Analysis Questionnaire.* This contains two different tasks. In the first task, participants choose 5 out of 40 traits (see Table 2) and then explain their choices in a few sentences. We selected the 40 traits based on Eagly et al.

(2020). In addition to stereotypically masculine (e.g., brave, aggressive) and feminine (e.g., sensitive, romantic) traits, the list also contains neutral (e.g., intelligent, stingy) traits. The traits were distributed as follows: 13 stereotypically masculine,

13 feminine, and 14 neutral traits.

In the second task, participants answer three different questions: (1) To what extent does the character’s appearance fit the traditional ideal of beauty? (2) To what extent did you find the character likeable? (3) Based on the scenes you have

seen, how important do you feel the character is to the story? Participants respond using a Likert scale from 1 to 5, with 1 meaning “not at all” and 5 meaning “completely”.

**Table 2.** List of traits used (alphabetical order, grouped by quality)

<b>Masculine Traits (n = 13)</b>	<b>Feminine Traits (n = 13)</b>	<b>Neutral Traits (n = 14)</b>
aggressive	compassionate	creative
ambitious	generous	fair
arrogant	impressionable	helpful
calm	honest	intelligent
confident	nurturing	irreverent
courageous	outgoing	level-headed
critical	patient	negligent
daring	polite	nonchalant
independent	romantic	open (to new ideas)
insensitive	sensitive	reserved
proud	submissive	stingy
selfish	timid	thorough
stubborn	unselfish	unfair
		unintelligent

**Organization of Research.** The study was conducted between October 2023 and March 2024. Sequence of research stages: (1) preparation of tools and designing the Google Form; (2) recruitment; (3) communication with participants and organizing interviews; (4) data collection and content analysis; (5) carrying out statistical analysis in Jamovi.

**Statistical Analysis.** Jamovi was used for statistical data processing. Normality was tested and followed by the appropriate T-tests and correlation analyses to test hypotheses.

**Table 3.** Descriptives for the factors “Old-Fashioned Sexism” and “Modern Sexism” for the entire sample and gender groups

<b>Sample and gender groups</b>	<b>n</b>	<b>M</b>	<b>Me</b>	<b>SD</b>
old-fashioned – sample	15	7.80	8	1.86
modern – sample	15	11.53	11	2.39
modern – men	6	13.0	12.5	3.03
modern – women	9	10.6	10	1.24

As the data on modern sexism did not follow normal distribution ( $W = .86$ ;  $p = .027$ ), the Wilcoxon test was used to determine whether there is a difference in the intensity of modern

and old-fashioned sexism. According to the test results ( $W = 2.50$ ;  $p = .002$ ;  $rbc = -.952$ ), there is a significant difference with a strong effect size in favor of modern sexism (as defined by Swim et al.).

## Perception of Female Video Game Characters in Relation to Gender Stereotypes and Sexism



Therefore, our first hypothesis is confirmed.

The data on modern sexism gathered from men and women (see Table 3) followed normal distribution (men:  $W = .96$ ;  $p = .798$ ; women:  $W = .85$ ;  $p = .082$ ), and the variants did not show homogeneity ( $F = 4.91$ ;  $p = .045$ ). We conducted an independent-samples T-test to determine whether there is a difference in the intensity of sexism regarding the two genders. The test results (Welch's  $t = 1.87$ ;  $p = .109$ ;  $d = 1.06$ ) showed a non-significant difference of modern sexist beliefs between men and women. Therefore, our second hypothesis is confirmed.

We measured the correlation between the sexism factors and the quantity of feminine traits chosen for each participant. First, we investigated whether the values of old-fashioned/modern sexism and the quantity of chosen feminine traits followed a normal distribution, then proceeded with the Correlation Matrix. Two factors did not follow normal distribution (quantity of feminine traits:  $W = .315$ ;  $p < .001$ ; modern sexism:  $W = .864$ ;  $p = .027$ ), which prompted us to use the non-parametric correlation test. The test results showed a non-significant difference for the quantity of feminine traits and both factors of sexism (quantity of feminine traits – old-fashioned sexism:  $df = 13$ ;  $p = .448$ ; quantity of feminine traits – modern sexism:  $df = 13$ ;  $p = .249$ ). Therefore, our third hypothesis is rejected.

We measured how participants viewed each character regarding masculinity and femininity. Each participant assigned five traits to the characters, which could be stereotypically feminine, masculine, or neutral. If three of the five traits belonged to the same category,

we considered the character to be feminine, masculine, or neutral. If the traits were selected in a two-two-one distribution (e.g., two feminine, two masculine, one neutral), the character was also assigned a neutral label. We then calculated the average sympathy of the characters labelled as feminine, masculine, and neutral for each participant. Finally, Repeated Measures ANOVA was used to compare scores on sympathy and sexism. The test results did not support our hypothesis (sympathy – old-fashioned sexism:  $df = 2$ ;  $p = .095$ ; sympathy – modern sexism:  $df = 2$ ;  $p = .574$ ). Therefore, our fourth hypothesis is rejected.

Data from all participants was compiled into three cumulated measures for each character: (1) Fit beauty standards ( $M = 25.9$ ;  $Me = 26.0$ ;  $SD = 3.83$ ); (2) Sympathy ( $M = 29.3$ ;  $Me = 30.0$ ;  $SD = 3.49$ ) and (3) Perceived importance ( $M = 32.7$ ;  $Me = 34.0$ ;  $SD = 4.64$ ). All three factors followed normal distribution (Fit beauty standards:  $W = .97$ ;  $p = .796$ ; Sympathy:  $W = .96$ ;  $p = .606$ ; Perceived importance:  $W = .92$ ;  $p = .182$ ). According to our hypothesis, an individual would find characters that fit beauty standards more sympathetic. To test our theory, we measured the correlation between Fit beauty standards and Sympathy, which was confirmed ( $df = 13$ ;  $p = .034$ ) with a moderate positive correlation ( $r_s = .55$ ) (see Table 4).

We also hypothesized that a character would be perceived as less important to the story if her appearance conformed to beauty standards which would present a negative correlation between these two factors. This was not confirmed ( $df = 13$ ;  $p = .357$ ) (see Table 4). Therefore, our fifth hypothesis is partially confirmed.

**Table 4.** Correlation matrix comparing scores for the “Sympathy” and the “Perceived importance” factors with the “Fit beauty standards” factor

	$r_s$	Fit beauty standards	
		df	p
sympathy	.550	13	.034
perceived importance	.256	13	.357

We assessed the quality of descriptions by using content analysis. Analysis was conducted by two independent coders who measured the extent of stereotypically feminine or masculine information in the participants’ descriptions.

This meant the extent to which the response was perceived as fitting stereotypically feminine or masculine roles. Scoring was done using a Likert scale ranging from 1 to 5, with 1 meaning “not at all” and 5 meaning “completely”. Consistency of

the raters' responses was assessed. According to the results ( $ICC = .743$ ;  $p < .001$ ), their consistency showed a moderately strong correlation, allowing us to continue our analysis. We used the data of the two most frequently chosen traits per character ( $n = 16$ ). Paired-samples T-tests were used to examine whether there was a significant

difference between the values of feminine and masculine information present in the descriptions. For neutral traits, the value difference was expected to be non-significant. Out of the sixteen traits examined, data for thirteen traits conformed to our expectations (see Table 5); therefore, our sixth hypothesis is partially confirmed.

**Table 5.** Statistics for all 16 most picked traits

Character name	Trait name	Trait quality	Information score M (masculine; feminine)	Statistic	Significance (p)	Confirmed
Amanda	ambitious	masculine	4.92 1.17	W = 78.0	< .001	Yes
	confident	masculine	4.77 1.18	W = 55.0	.001	Yes
Amelie	sensitive	feminine	1.43 4.64	W = 1.00	< .001	Yes
	unselfish	feminine	3.71 3.07	t = 1.49 df = 6.00	.906	No
Divine Child	calm	masculine	2.65 2.65	t = .00 df = 9.00	.500	No
	submissive	feminine	1.67 3.33	W = .00	.004	Yes
Emma	intelligent	neutral	1.63 1.92	W = 1.00	.197	Yes
	reserved	neutral	4.56 1.31	W = 28.0	.020	No
Fragile	ambitious	masculine	4.83 1.17	W = 45.0	.003	Yes
	stubborn	masculine	4.63 1.56	W = 36.0	.006	Yes
Kara	courageous	masculine	4.95 1.60	W = 55.0	.003	Yes
	nurturing	feminine	1.77 4.69	W = 3.50	.002	Yes
Tomoe	arrogant	masculine	4.63 1.13	W = 28.0	.005	Yes
	daring	masculine	5.00 1.00	W = 28.0	.005	Yes
Yuna	courageous	masculine	4.67 1.56	W = 36.0	.006	Yes
	nurturing	feminine	1.96 4.75	W = 5.50	.004	Yes

**Note:** "Information score M" indicates the mean of the scores for masculine and feminine information present in the descriptions given by participants, as determined by raters as a result of the content analysis process. The mean of the scores for "masculine information" is presented first, and the mean of the scores for "feminine information" is presented underneath.

## Discussion

Considering the statistical analysis, we found that the acceptance of modern sexist views (Swim et al., 1995) was higher in the examined sample, with no significant difference in terms of gender.

The extent to which a participant identified with old-fashioned or modern sexist views influenced how they perceived female video game characters, but the findings are unsatisfactory. We conclude that a higher degree of sexism did not show a clear correlation with choosing stereotypically feminine characteristics. While the participants' reasons behind their choices were likely to be based on stereotypes, this phenomenon cannot be linked to sexism.

Unexpected results were also obtained in the case of sympathy for the examined characters: the formation of a positive opinion was correlated with the degree of conformity to the traditional European beauty ideal, but this did not lead to a devaluation of the role played in the story.

When assessing the most frequently chosen traits for characters, most traits ( $n = 9$ ) were considered stereotypically masculine, followed by feminine traits ( $n = 5$ ) and neutral traits ( $n = 2$ ). This indicates that female representations are becoming less stereotypically feminine, suggesting that video game companies are striving to create more diverse and modern characters.

There were many opposing opinions regarding characters attributed with masculine traits, as some participants considered Amanda's (Detroit: Become Human, 2018) ambition inspirational, while others disapproved of her insensitive comments. A comparable situation occurred with the character Tomoe (Ghost of Tsushima, 2020), whose betrayals elicited ambivalent reactions.

Exclusively feminine traits were attributed to only one character, Amelie (Death Stranding, 2019), who played a key role in the story. Interestingly, displaying stereotypically feminine characteristics evoked similarly opposing reactions from the participants, resulting in frustration alongside sympathy.

**Limitations.** The primary limitation was the small sample size, as it is not possible to draw conclusions about a large population with the inclusion of 15 people. The gender ratio in the sample was also unbalanced, so the data may have been

distorted by the majority of female participants.

The English language skill requirement certainly limited the number of potential participants, as there was no official Hungarian translation available for most of the games featured in the study.

Participants' choices might have been influenced by the limited number of traits present in the Character Analysis Questionnaire, as some noted that it lacked the "wise" and "manipulative" traits. Several participants expressed difficulty answering the question "Does this character fit into traditional beauty standards?", as they were unsure what traditional beauty entails and whether they could evaluate characters of Asian descent based on those criteria. Some gave an answer such as "her looks don't suit European standards, but they certainly suit Asian ones."

Conducting a similar study in the future could benefit from a different experimental design or shorter video material, as several participants reported that the interview was long.

Considering these limitations, the study material and research tools need to be refined, but given our findings, we obtained acceptable results in this study, thereby increasing the available information on gender representation in media.

## Conclusion

The primary goal of this study was to explore how women are portrayed in currently popular video games while investigating how players perceive and respond to them.

There is sufficient evidence detailing how the representation of women in media has undergone radical changes over the past decades (e.g., Allen, 2024; Devčić & Sabol, 2024; Forni, 2020; Leach & Dehnert 2021; Lynch et al., 2016) and our findings further support this idea.

It is important to consider that representations of women can never be separated from sexist ideologies, because social phenomena that maintain traditional ideas and expectations associated with them (e.g., beauty standards) are deeply embedded in people's consciousness and culture (Cabeza-García et al., 2019; Chung, 2022).

While globalization and digital media seem to have greatly transformed the way we view gender roles in recent decades (Cabeza-García et al., 2019), the effects of modern sexism are

still present in our everyday lives (Doolard et al., 2022; Krivoshchekov et al., 2023; Off et al., 2022), including the representation of female characters in our favourite video games (Jansz & Martis 2007; Roberts, 2012; Rodrigues da Silva Neto, 2020; Tompkins et al., 2020).

Based on our findings, we conclude that the representation of women in video games has undergone significant changes, although conforming to beauty standards will remain important – or at least for the foreseeable future (Forni, 2020; Leach & Dehnert, 2021). However, seeing female characters who present diverse qualities and skills and fulfil numerous vital roles is a major step forward from the archetype of the “damsel in distress” (Allen, 2024; Devčić & Sabol, 2024; Forni, 2020; Leach & Dehnert, 2021).

By comparing results on perceived sympathy, we found that one’s alignment with sexist views does not lead to a clear formation of positive or negative opinions.

In summation, our findings show that the characters examined in our research were described in an extremely diverse way by the participants. From the reactions to the characters, we conclude that sexist views can be considered influential, but the relationship is not clearly established. It would be of importance to examine the topic in terms of other sexist ideologies, for example, through the lens of ambivalent sexism (Glick & Fiske, 1996).

In the future, we would like to conduct further research involving male characters to gain a more detailed picture of gender representations in modern video games while examining possible connections with external and internal factors, such as culture and sexuality.

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## Perception of Female Video Game Characters in Relation to Gender Stereotypes and Sexism



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