

Cyberpsychology research in Bulgaria: Overview and perspectives

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Abstract. The article provides an overview of Bulgarian cyberpsychology research and outlines perspectives for its future development. The findings from a review of Bulgarian cyberpsychology articles indicate that: 1) all major international research themes are present to varying degrees in the Bulgarian literature, with some current topics missing; 2) research methodology is biased towards qualitative and mixed; 3) the use of mostly Bulgarian samples reflects national reality but disallows cross-cultural comparisons; 4) the cited literature is largely international, with an emerging Bulgarian tradition. These observations are discussed in the light of international cyberpsychology research and two suggestions for further development of Bulgarian cyberpsychology research are put forward - leveraging unique strengths and directed effort.

Keywords: cyberpsychology, research, Bulgaria, overview, perspectives

Introduction

What is cyberpsychology?

With technological advancement more and more people are using the Internet in all domains of life - education, work, dating, entertainment, etc. Increasing interaction over this communication medium has given rise to numerous Internet-related phenomena that have caught the attention of the psychology and other research communities. As a result of the focused study of these phenomena from a psychological perspective a new trans-disciplinary research field has emerged - *cyberpsychology*. Cyberpsychology, in most basic terms, relates to the study of psychological phenomena stemming from interaction with technology and the Internet (The British Psychological Society 2024).

Cyberpsychology around the world

Around the world several professional organizations dedicated to cyberpsychology have been established. Among them are, for instance, Division 46 (Society for Media Psychology and Technology) of the American Psychological Association (APA) and Cyberpsychology Section of the British Psychological Society. Dedicated scientific journals serve as primary outlets for cyberpsychology research output - *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*; *Cyberpsychology, Behavior, and Social Networking*; *Internet Research*; *Computers in Human Behavior*; *Behaviour & Information Technology*; *New Media & Society*; *Journal of Computer-Mediated Communication*; *International Journal of Human-Computer Studies*; *International Journal of Human-Computer Interaction*, etc. To prepare future leaders to best meet the needs of a technology-based society educational programs in cyberpsychology are being created on both the undergraduate and graduate level. A few examples include the BSc (Hons) program in Cyberpsychology at the University of East London, the MSc in Cyberpsychology at Nottingham Trent University, the MSc in CyberPsychology at Norfolk State University, etc. Multiple textbooks have already been written to initiate interested students to the theory and methodology of the field (e.g., Attrill-Smith et al. (eds.) 2018; Kirwan et al. (eds.) 2024; Suler 2023, which began as a freely available online hypertext in 1996 and was continuously updated throughout the years; Whitty, Young 2016). Overall, the field is growing and is gaining importance as it addresses pressing phenomena of high societal relevance that are linked to human interaction with technology.

Cyberpsychology in Bulgaria

Although the term “cyberpsychology” itself is a fairly new to the Bulgarian scientific landscape (introduced in Dr. Astra Manasieva’s topical monograph from 2016), research in the field does exist and is reviewed later in this work. Education has focused on the security aspect with several undergraduate and graduate programs on cybersecurity (e.g., New Bulgarian University, Sofia Technical University, Rakovski National Defence College, Paisii Hilendarski University of Plovdiv). In response to surging public interest in various cyberpsychology phenomena a recent monograph by Prof. Sava Dzhonev, DSc (2024) has been published to serve simultaneously as a cyberpsychology textbook and a blueprint for conducting systematic research and teaching in the field on a national level.

This work

The present work takes a step further into facilitating and directing Bulgarian research efforts in the field of cyberpsychology with the goal of achieving international research impact. To this aim, the text reviews previous cyberpsy-

chology research published in major Bulgarian psychology journals, identifies its crucial strengths and limitations, and outlines perspectives for future development.

Method

A starting point for the present work was a recent review article of cyberpsychology literature on the international level by Ancis (2020) which organizes major findings into several thematic categories. To guide the current review and synthesis, Ancis' categorization and several other parameters were applied (see Focus and Data Extraction below).

Selection of sources

The lack of a unified and easily searchable digital science database in Bulgaria presented a challenge for the planned work. Nevertheless, an effort was made to follow a systematic approach. Aiming at maximum objectivity and comprehensiveness, the following method was applied. The choice of sources was informed by informal consultations with experienced psychology researchers, presently conducting studies in Bulgaria. Most of them identified two Bulgarian scientific journals as the leading and longest-standing in the field of psychology - *Българско списание по психология / Bulgarian Journal of Psychology* or BJP (the official journal of the Bulgarian Psychological Society, established in 1973 and formerly published under the name *Психология/Psychology*), and *Психологични изследвания (на Балканите) / Psychological Research (in the Balkans)* or PsyRB (issued by the Institute for Population and Human Studies at the Bulgarian Academy of Sciences, established in 1987 and formerly known as *Психологични изследвания / Psychological Research*). In addition to regular scientific articles, these journals also serve as outlets for documenting research presented at major national professional events in the field of psychology. Thus, the decision was made to conduct the literature search on those journals as they seemed most likely contain the research, in terms of scope, quality, and time coverage, that was to be reviewed. To make sure no research was left out, brief preliminary searches were also conducted on several smaller-scale and newer Bulgarian psychological journals. A brief Google search was conducted as well. As these searches did not result in identifying any key Bulgarian cyberpsychology research, the final search was conducted on BJP and PsyRB in August 2024.

Search time coverage (and related search medium)

Both journals are open-access, and the literature search covered their entire publication spans. For BJP the search included all issues between 1973 and 2022, and for PsyRB all issues between 1987 and 2023. Almost all BJP issues are available in digital format on the website of the Bulgarian Psychological Society (<http://psychology-bg.org/архив-на-спусането>) and all PsyRB issues since June 2012 are available on the website of the journal (<https://journalofpsychology.org/index.php/1/issue/archive>). Since some BJP and a significant amount

of PsyRB issues were not available in digital format, the search continued in the library archive of the Institute for Population and Human Studies at the Bulgarian Academy of Sciences (IPHS-BAS) where the remaining issues were examined in paper format.

Although a search dating so far back in time may not appear necessary at first glance, it was motivated by the desire to uncover all research reflecting human-computer interaction in a Bulgarian setting. Later on, details are provided on which articles were kept for the review synthesis and which were only commented on for completeness. It is also relevant to note that although digitalization of both journals in the Central and Eastern European Online Library (CEEOL) was underway, it was not yet complete at the time of conducting this review, and some of the older full-length texts would still have needed to be accessed on paper in the library. While a key-term search would have been easier and faster in CEEOL, the current strategy was optimized to skip additional steps and crosschecks and prevent delays. Upon complete journal digitalization searches could undoubtedly be conducted efficiently mostly or solely online.

Search terms and strategy

As a fully efficient database-type key term search was not possible at the time of conducting the present review, the following strategy was applied. First, the contents of each journal issue were manually screened for any words (in Bulgarian and English, as often the article titles in the contents are available in both languages) either directly matching or grammatically/semantically related to the terms “computers”, “Internet”, “(social/digital) media”, “virtual”, “digital”, “cyber”, “telecommunications”, “electronic”, “technology”, “IT”, “web”, and “online”. If any word of interest was contained in a journal article, the full-text version of the article was obtained and collected in the review database. This article search strategy resulted in a database containing 102 documents.

Inclusion/exclusion criteria

The abstract of each of the initially obtained 102 articles was carefully read and the decision was made whether to include or exclude the article in the final review. In some cases where the abstract was insufficient to make the inclusion/exclusion decision, the full-text of the article was examined until a decision was reached. The first screening stage (rough screening) aimed to remove any documents that were unrelated to the field of cyberpsychology and/or did not fall into the research report format. The rough screening stage resulted in the exclusion of nine articles that turned out to be unrelated to the field of cyberpsychology (e.g., advertising, TV, etc.) and five documents that did not report research (one announcement, one expert report, and three meeting reports). The second screening stage (fine-grained) was aimed at sharpening the focus of the reviewed material by removing any articles that did not fall into the five key worldwide cyberpsychology research directions outlined by Ancis (2020). This step resulted in the exclusion of 21 articles whose main focus was traditional

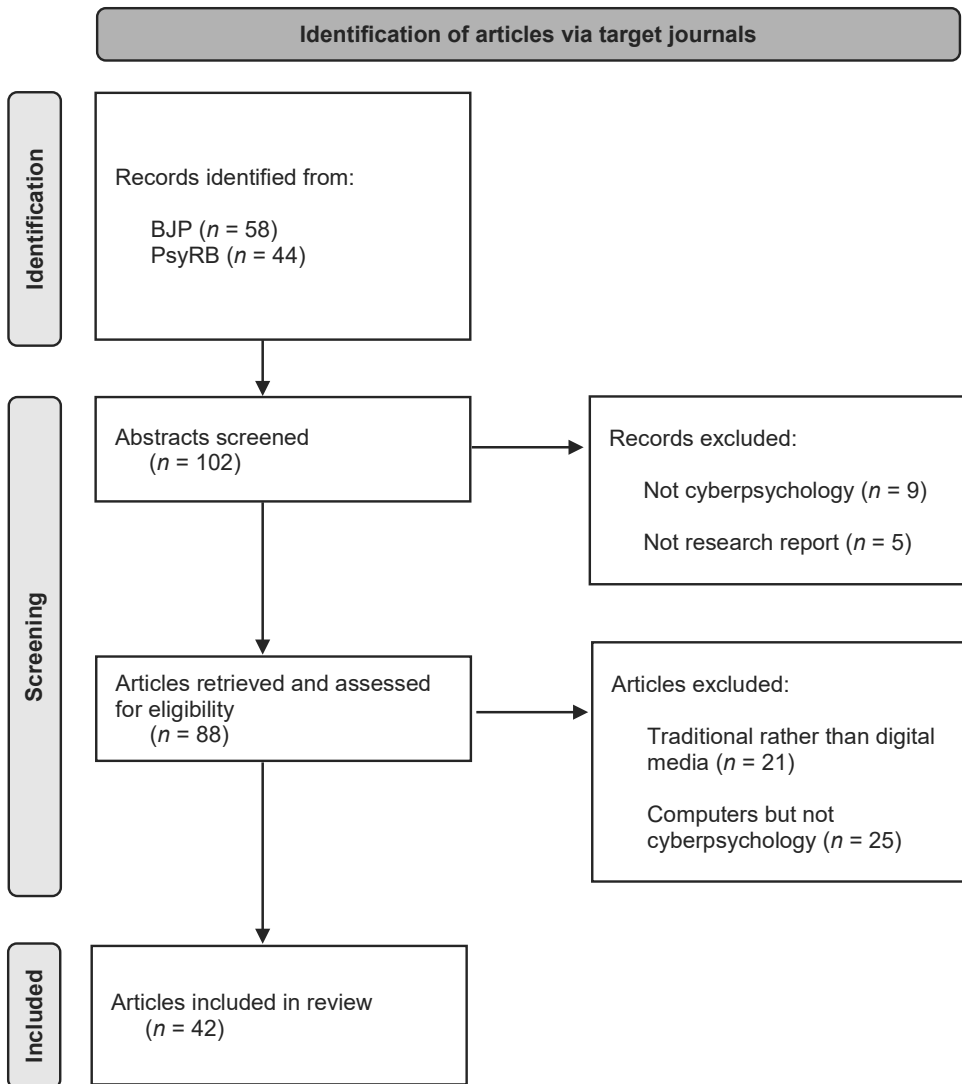


Fig. 1. Adapted PRISMA flow diagram (Page et al. 2021) reflecting the literature search and selection process

rather than online media and 25 articles on computers, automation, and human-computer interaction which somehow missed present-day cyberpsychology focus. Although not part of the Ancis' (2020) categorization and thus falling outside of the scope of the present review, these two thematic article subgroups still represent key subfields in Bulgarian psychology research tradition and have to various extents contributed to the inception and development of Bulgarian cyberpsychology. Thus, both thematic fields are not included in the main synthesis of the article but are still briefly commented upon with the goal of enabling

better understanding for the reader of the present Bulgarian cyberpsychology research landscape.

The literature search-and-selection process was modelled after the PRISMA protocol for conducting systematic reviews (Page et al. 2021) and is presented graphically in Fig. 1 resulted in 42 articles that were included in the final review.

Focus and data extraction

The primary focus of the present review falls on the *topics* addressed by cyberpsychology research in Bulgarian settings. In addition, to obtain a more comprehensive view of Bulgarian in relation to worldwide cyberpsychology research, the present work also discusses the *methods*, *sample*, and *literature* used in the reviewed articles. Thus, the following data were extracted from each article: studied phenomenon, method, sample nationality, language of the cited literature. Data were first obtained on a single-article level (Table 1) and were later aggregated on the level of Ancis' (2020) categories (Table 2) to enable synthesis and higher-level interpretation. Finally, the *distribution over time* of articles across the Ancis categories, along with each article's overall methodology, is provided in Fig. 2.

Table 1. All reviewed articles with their respective studied phenomenon, method, sample nationality, and language of cited literature

| Article (chronological, then alphabetical order) | Studied Phenomenon | Method ^a | Sample ^b | Literature ^c (alphabetical order) |
|--|--|---|---------------------|--|
| <u>Online Behavior and Personality</u> | | | | |
| Dinchev 2005: Г. Динчев. Комуникация чрез ICQ, IRC, e-mail и дискуссионни форуми в интернет. - Българско списание по психология, 2005, 126-139. (G. Dinchev. Komunikatsiya chrez ICQ, IRC, e-mail i diskusionni forumi v internet. – Balgarsko spisanie po psihologiya, 2005, 126-139.) | interpersonal and group processes in different Internet communication means (individual and small group chat, e-mail, websites, discussion forums) | survey (online) | BG | 7 EN 1 FR (RU transl.) 4 RU |
| Dimitrov 2006: Н. Димитров. Интернет-комуникациите и виртуалният Аз. - Българско списание по психология, 2006, 1, 74-92. (N. Dimitrov. Internet-komunikatsiite i virtualniyat Az. - Balgarsko spisanie po psihologiya, 2006, 1, 74-92.) | characteristics of the Internet communication process and the virtual self | theoretical analysis | NA | 2 BG 1 DE (BG transl.) 8 EN 1 FR (BG transl.) 3 RU |
| Dimitrov 2007: Н. Димитров. Аз-образ и себепредставяне в интернет: цели и начини за постигането им. - Българско списание по психология, | goals, and means for achieving thereof, of the virtual self | theoretical analysis; content analysis | BG | 5 BG 14 EN (1 BG transl.) 5 RU |

Table 1 (continued)

| | | | | | |
|---|--|---|----|--|--|
| 2007, 3, 104-134. (N. Dimitrov. Az-obrazat i sebedpredstavayane v internet: tseli i nachini za postiganeto im. - Balgarsko spisanie po psihologiya, 2007, 3, 104-134.) | | | | | |
| Dimitrov 2008: Н. Г. Димитров. Параметри на Аз-а във виртуална среда. - Балгарско списание по психология, 2008, 1-4, 79-86. (N. G. Dimitrov. Parametri na Az-a vav virtualna sreda. - Balgarsko spisanie po psihologiya, 2008, 1-4, 79-86.) | comparison of mental and physical characteristics between the real and virtual self | survey | BG | 2 BG 3 EN (1 BG transl.) 1 RU | |
| Slavcheva 2008: Г. В. Славчева. Някои характеристики на юношеската идентичност, изявени чрез Интернет-средата. - Балгарско списание по психология, 2008, 1-4, 308-313. (G. V. Slavcheva. Nyakoi harakteristiki na yunosheskata identichnost, izyaveni chrez Internet-sredata. - Balgarsko spisanie po psihologiya, 2008, 1-4, 308-313.) | specifics of adolescent identity on the Internet | theoretical analysis | NA | 6 EN (1 BG, 1 RU transl.) 1 RU 2 unknown | |
| Bakracheva, Bakalova 2009: М. Бакрачева, Д. Бакалова. Виртуална идентичност и стил на идентичност на Интернет потребителя. - Психологични изследвания, 12, 2009, 2, 161-167. (M. Bakracheva, D. Bakalova. Virtualna identichnost i stil na identichnostta na Internet potrebitelya. - Psihologichni izsledvaniya, 12, 2009, 2, 161-167.) | conceptual framework, and empirical test thereof, for studying virtual identity in middle-aged adults; extraction of virtual identity typology | theoretical analysis; semi-structured interview; survey | BG | 51 EN (1 BG transl.) | |
| & Bakracheva, Bakalova 2011: М. Бакрачева, Д. Бакалова. Теоретична рамка за изследване на виртуалната идентичност като компонент от психосоциалната идентичност на е-потребителя. - Балгарско списание по психология, 2011, 1-2, 63-82. (M. Bakracheva, D. Bakalova. Teoretichna ramka za izsledvane na virtualnata identichnost kato komponent ot psihosotsialnata identichnost na e-potrebitelya. - Balgarsko spisanie po psihologiya, 2011, 1-2, 63-82.) | | | | | |
| Bakalova, Bakracheva 2012: Д. Бакалова, М. Бакрачева. Динамика на съдържанието на профилните снимки във Фейсбук. - Психологични изследвания, 15, 2012, 2, 83-94. | importance of Facebook profile pictures for online self-presentation and promotion revealed in the dynamics | semi-structured interview; content analysis | BG | 4 BG 22 EN (1 BG transl.) | |

Table 1 (continued)

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|--|--|--|----|------------------------------|
| (D. Bakalova, M. Bakracheva. Dinamika na sadarzhanieto na profilnite snimki vav Feisbuk. - Psihologichni izsledvaniya, 15, 2012, 2, 83-94.) | (content, frequency of change, motivation for change) of Facebook profile pictures over 3-month period | | | |
| Kiryakov, Zinovieva, Ivanov 2013: М. Киряков, И. Зинovieva, С. Иванов. Азът в реалния и виртуалния свят. - Психологични изследвания, 16, 2013, 1, 17-23. (M. Kiryakov, I. Zinovieva, S. Ivanov. Azat v realniya i virtualniya svyat. - Psihologichni izsledvaniya, 16, 2013, 1, 17-23.) | differences between the real self and virtual self | semi-structured interview; conceptual cluster analysis | BG | 9 EN |
| Golovinska-Georgieva 2013: Е. Головинска-Георгиева. Полови различия в когнитивните измерения на речевото общуване в Интернет в училищна възраст (I-XII клас). - Психологични изследвания, 16, 2013, 2, 385-403. (E. Golovinska-Georgieva. Polovi razlichiya v kognitivnite izmereniya na rachevoto obshtuvane v Internet v uchilishtna vazrast (I-XII klas). - Psihologichni izsledvaniya, 16, 2013, 2, 385-403.) | gender differences in cognitive aspects of verbal Internet communication measured cross-sectionally in three primary and secondary education groups | survey | BG | 6 BG 12 EN (2 BG transl.) |
| Zinovieva, Kiryakov 2015: И. Зинovieva, М. Киряков. Предпоставки за популярност и личен социален капитал във виртуалните социални мрежи. - Психологични изследвания, 18, 2015, 2, 117-122. (I. Zinovieva, M. Kiryakov. Predpostavki za populyarnost i lichen sotsialen kapital vav virtualnite sotsialni mrezi. - Psihologichni izsledvaniya, 18, 2015, 2, 117-122.) | personality (Big Five, core self-evaluation) and online behaviour (information seeking, opinion sharing, expertise and experience sharing, communication with close ones, emotion expression, artistic self-presentation) as predictors of popularity and social capital in online social networks | survey | BG | 1 BG 8 EN |
| Mengov et al. 2015: Г. Менгов, И. Зинovieva, М. Караиванова, Е. Паунова-Маркова. Нагласи към споделянето на информация във виртуална общност при вземане на икономически решения. - Психологични изследвания, 18, 2015, 2, 235-240. (G. Mengov, I. Zinovieva, M. Karaivanova, E. Paunova-Markova. Naglasi kam spodelyaneto na informatsiya vav virtualna obshtnost pri vzemane na ikonomicheski resheniya. - Psihologichni izsledvaniya, 18, 2015, 2, 235-240.) | young people's attitudes towards information sharing within virtual social networks | experiment (online); conceptual cluster analysis | BG | 8 EN |

Table 1 (continued)

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|---|--|---|-----------|--------------------------------------|
| <p>Hristova 2017: Т. Христова. Самостоятелно представяне на потребителите в онлайн социалните мрежи в преследване на взаимоотношения. - Психологични изследвания, 20, 2017, 1, 161-168. (Т. Hristova. Samostoyatelno predstavяne na potrebitelite v onlayn sotsialnite mrezhi v presledvane na vzaimootnosheniya. - Psihologichni izsledvaniya, 20, 2017, 1, 161-168.)</p> | <p>influence of peer pressure on self-presentation in online social networks</p> | <p>in-depth interview</p> | <p>BG</p> | <p>1 BG 9 EN</p> |
| <p>Milusheva, Zinovieva, Gaydazhieva 2019: Ж. Милушева, И. Зинovieва, Ц. Гайдажиева. Емоционална експресивност и артистично себепредставяне във виртуалните социални мрежи. - Психологични изследвания, 22, 2019, 2, 331-350. (Z. Milusheva, I. Zinovieva, T. Gaydazhieva. Emotsionalna ekspresivnost i artisticno seбepredstavяne vav virtualnite socialni mrezhi. - Psihologichni izsledvaniya, 22, 2019, 2, 331-350.)</p> | <p>link between emotional expressivity and artistic self-presentation in virtual social networks</p> | <p>survey (online)</p> | <p>BG</p> | <p>2 BG 33 EN (1 BG transl.)</p> |
| <p>Tsankova, Tair 2021: Е. Цанкова, Е. Таир. Мета точността на първите впечатления онлайн. - Българско списание по психология, 2021, 1, 78-83. (E. Tsankova, E. Tair. Meta tochnostta na parvite vpechatleniya onlayn. - Balgarsko spisanie po psihologiya, 2021, 1, 78-83.)</p> | <p>presenting a project aiming to study the factors that influence meta-accuracy of first impressions formed on the Internet</p> | <p>literature review; comparative analysis; meta-analysis; experiments (incl. online)</p> | <p>NA</p> | <p>7 EN</p> |
| <p>Nikolova 2021: В. Николова. Скала за кибервиктимизация и кибертормоз: факторна структура и надеждност в извадка с български юноши. - Българско списание по психология, 2021, 2, 26-34. (V. Nikolova. Skala za kiberviktimizatsiya i kibertormoz: faktorna struktura i nadezhdnost v izvadka s balgarski yunoshi. - Balgarsko spisanie po psihologiya, 2021, 2, 26-34.)</p> | <p>approbation of the Cyber victim and bullying scale (CVBS) in a Bulgarian sample</p> | <p>survey</p> | <p>BG</p> | <p>1 BG 11 EN</p> |
| <p>Hristova, Krumova 2021: П. Христова, А. Крумова. Виртуалното лидерство - психологически аспекти. - Българско списание по психология, 2021, 4, 221-228. (P. Hristova, A. Krumova. Virtualnoto liderstvo - psihologicheski aspekti. - Balgarsko spisanie po psihologiya, 2021, 4, 221-228.)</p> | <p>psychological aspects of virtual leadership - competencies and leadership styles for effective virtual management</p> | <p>theoretical analysis</p> | <p>NA</p> | <p>1 BG 14 EN (1 BG transl.)</p> |

Table 1 (continued)

| | | | | |
|---|---|---|----|-----------------------------|
| Momchilova 2022: Г. Момчилова. Засилване на вербалния тормоз в училище при преминаване към обучението в електронна среда. - Българско списание по психология, 2022, 1, 105-116. (G. Momchilova. Zasilvane na verbalniya tormoz v uchilishte pri preminavane kam obuchenie v elektronna sreda. - Balgarsko spisanie po psihologiya, 2022, 1, 105-116.) | online communication as a primary source of bullying and a cause for increased bullying at school | survey | BG | 5 BG 3 EN (2 BG transl.) |
| Miteva 2022: P. Miteva. Unfriending on Facebook: specifics, motivations, and repercussions for the unfriended. - Psychological Research, 25, 2022, 1, 35-42. | unfriending on Facebook - phenomenon and process characteristics, motivation for unfriending, and consequences for the unfriended | literature review; theoretical analysis | NA | 1 BG 21 EN |
| <u>Social Media Use and Psychological Functioning</u> | | | | |
| Bakalova, Bakracheva 2011: Д. Бакалова, М. Бакарачева. Структуриране на времето и възприемане на общуването във виртуалните социални мрежи: качествен анализ на случаи. - Психологични изследвания, 14, 2011, 2, 201-211. (D. Bakalova, M. Bakracheva. Strukturirane na vremeto i vazpriemane na obshtuvaneto vav virtualnite sotsialni mrezi: kachestven analiz na sluchai. - Psihologichni izsledvaniya, 14, 2011, 2, 201-211.) | link between time structuring (frequency, duration, purpose) and subjective communication experience on Facebook | semi-structured interview; survey | BG | 1 BG 17 EN |
| Budeva 2011: С. Будева. За „тъмната“ страна на социалните мрежи. - Психологични изследвания, 14, 2011, 2, 231-238. (S. Budeva. Za "tamnata" strana na sotsialnite mrezi. - Psihologichni izsledvaniya, 14, 2011, 2, 231-238.) | negative aspects of cyber communication - risks for physical, mental, and social health | theoretical analysis | NA | 10 EN |
| Slavcheva 2011: Г. Славчева. Емоционални преживявания на юношите във виртуалната среда. - Българско списание по психология, 2011, 3-4, 323-326. (G. Slavcheva. Emotsionalni prezhivyavaniya na yunoshite vav vitrualnata sreda. - Balgarsko spisanie po psihologiya, 2011, 3-4, 323-326.) | link between prolonged stay in virtual environments and related experienced emotions in adolescents | survey | BG | 5 EN (1 BG transl.) 1 RU |

Table 1 (continued)

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|--|--|------------------------|------------------------------------|-------------------------------------|
| <p>Ivanova 2011: Е. Иванова. Взаимовръзка между интернет зависимости и благополучие. - Българско списание по психология, 2011, 3-4, 793-800. (E. Ivanova. Vzaimovrazka mezhdru internet zavisimosti i blagopoluchie. - Balgarsko spisanie po psihologiya, 2011, 3-4, 793-800.)</p> | <p>link between Internet addiction and well-being</p> | <p>survey</p> | <p>BG</p> | <p>17 EN</p> |
| <p>Slavcheva 2014: Г. Славчева. Изследване на връзките между времето на пребиваване в интернет и проявите на личностна тревожност при юношите. - Българско списание по психология, 2014, 1-3, 70-80. (G. Slavcheva. Izsledvane na vrazkite mezhdru vremeto na prebivavane v internet i proyavite na lichnostna trevozhnost pri yunoshite. - Balgarsko spisanie po psihologiya, 2014, 1-3, 70-80.)</p> | <p>link between time spent on the Internet and anxiety in adolescents</p> | <p>survey</p> | <p>BG (same as Slavcheva 2011)</p> | <p>2 BG 8 EN (1 BG transl.)</p> |
| <p>Chubrieva 2017: М. Чубриева. Тормозът в интернет и чувството за благополучие. - Българско списание по психология, 2017, 1-4, 160-176. (M. Chubrieva. Tormozat v internet i chuvstvoto za blagopoluchie. - Balgarsko spisanie po psihologiya, 2017, 1-4, 160-176.)</p> | <p>link between cyberbullying and well-being</p> | <p>survey (online)</p> | <p>BG</p> | <p>14 DE 42 EN</p> |
| <p>Aleksandrova-Karamanova 2017: А. Александрова-Караманова. Употреба на електронни медии и здраве и благополучие на юношите. - Психологични изследвания, 20, 2017, 3, 481-495. (A. Aleksandrova-Karamanova. Upotreba na elektronni medii i zdrave i blagopoluchie na yunoshite. - Psihologichni izsledvaniya, 20, 2017, 3, 481-495.)</p> | <p>link between use of electronic media and health and well-being in adolescents</p> | <p>survey</p> | <p>BG</p> | <p>6 BG 16 EN</p> |
| <p>Slavcheva-Andonova 2021: Г. Славчева-Андонова. Психологически характеристики на интернет потреблението в юношеска възраст. - Българско списание по психология, 2021, 2, 52-60. (G. Slavcheva-Andonova. Psihologicheski harakteristiki na internet potreblenieto v yunosheska vazrast. - Balgarsko spisanie po psihologiya, 2021, 2, 52-60.)</p> | <p>psychological characteristics of adolescent Internet use</p> | <p>survey</p> | <p>BG (same as Slavcheva 2011)</p> | <p>1 BG 5 EN</p> |

Table 1 (continued)

| Telepsychology | | | | |
|--|--|-------------------------------------|--------------------------|---------------|
| Spasova 2008: А. В. Спасова. Дистанционни терапевтични техники в интернет пространството. - Българско списание по психология, 2008, 1-4, 735-742. (A. V. Spasova. Distantionni terapevtichni tehniki v internet prostanstvoto. - Balgarsko spisanie po psihologiya, 2008, 1-4, 735-742.) | presenting the first Bulgarian telepsychology platform; outlining the working process, experienced benefits and difficulties, nature of efficiently resolved problems from the Internet psychologists' perspective | observational | BG | 1 BG 1 EN |
| Yordanova et al. 2008: М. М. Йорданова, Л. В. Василева, М. Р. Георгиева, Р. Б. Манова, Ц. П. Дачев. Проучване на нагласите към виртуално психологично консултиране. - Българско списание по психология, 2008, 1-4, 772-776. (M. M. Yordanova, L. V. Vasileva, M. R. Georgieva, R. B. Manova, T. P. Dachev. Prouchvane na naglasite kam virtualno psihologichno konsul-tirane. - Balgarsko spisanie po psihologiya, 2008, 1-4, 772-776.) | changes in Bulgarian Internet consumers' attitudes towards virtual psychological consultations in the period 2006-2008 | survey (incl. online) | BG | 5 EN |
| Vasileva et al. 2009: Л. Василева, М. Йорданова, М. Рашева, Р. Божинова. Виртуално консултиране: възможност за справяне на индивидуално ниво. - Психологични изследвания, 12, 2009, 2, 215-220. (L. Vasileva, M. Yordanova, M. Rasheva, R. Bozhinova. Virtualno konsul-tirane: vazmozhnost za spravyane na individualno nivo. - Psihologichni izsledvaniya, 12, 2009, 2, 215-220.) | influence of individual differences (age, gender) on clients' attitudes towards psychological consultations on the Internet | survey (incl. online) | BG | 3 BG 6 EN |
| Jordanova et al. 2009: М. Jordanova, L. Vasileva, R. Vojinova, M. Rasheva, T. Dachev. Problems of virtual psychological counselling: lessons learned. - Bulgarian Journal of Psychology, 2009, 3-4, 449-457. | influence of individual (age, gender, education) and personality (level of anxiety, locus of control) differences on consumers' attitudes towards telepsychology | surveys (online) | BG | 10 EN |
| Yordanova 2011: М. Йорданова. Добрите практики в електронното здравеопазване Европа (Проектът TeleSCOPE). - Българско списание по психология, 2011, 3-4, 801-805. (M. Yordanova. Dobrite praktiki v elektronnoto zdraveopazvane Evropa (Proektat TeleSCOPE). - Balgarsko spisanie po psihologiya, 2011, 3-4, 801-805.) | presenting a project aiming to develop a comprehensive Code of Practice for Telehealth (incl. psychological) services in Europe | literature review; surveys (online) | several EU nationalities | 1 BG 18 EN |

Table 1 (continued)

| | | | | |
|--|--|---|----|---|
| Krumova-Pesheva 2021: Р. Крумова-Пешева. Психотерапевтичното общуване чрез електронни средства - особености и ограничения. - Българско списание по психология, 2021, 3, 171-179. (R. Krumova-Pesheva. Psihoterapevtichното obshtuvane chrez elektronni sredstva - osobenosti i ograniceniya. - Balgarsko spisanie po psihologiya, 2021, 3, 171-179.) | specifics and limitations of psychotherapy via electronic means | observational (case studies) | BG | NA |
| Savov 2021: С. Савов. Някои бележки върху психоаналитичната работа в условия на пандемия от COVID-19. - Българско списание по психология, 2021, 3, 180-188. (S. Savov. Nyakoi belezhki varhu psihoanalitichnata rabota v usloviya na pandemiya ot COVID-19. - Balgarsko spisanie po psihologiya, 2021, 3, 180-188.) | critical analysis of tele- and video-mediated psychoanalysis during the COVID-19 pandemic | theoretical analysis; observational | NA | 17 EN |
| Games and Gaming | | | | |
| Tsanov 2005: К. Цанов. Привлекателност на компютърните игри и влиянието им върху поведението в юношеска възраст. - Психологични изследвания, 8, 2005, 3, 267-273. (K. Tsanov. Privlekatelnost na kompyutarnite igri i vliyanieto im varhu povedenieto v yuno-sheska vazrast. - Psihologichni izsledvaniya, 8, 2005, 3, 267-273.) | computer game typology; positive and negative aspects of playing computer games; preferences for computer games in Bulgarian adolescents | literature review; survey | BG | 2 BG 2 EN (ES transl.) 13 ES 2 RU (1 BG transl.) |
| Bozhinova, Tsanov 2006: Р. Божинова, К. Цанов. Упражняване на компютърните игри - възрастови и личностни предпоставки. - Българско списание по психология, 2006, 2, 87-97. (R. Bozhinova, K. Tsanov. Uprazhnyavane na kompyutarnite igri - vazrastovi i lichnostni predpostavki. - Balgarsko spisanie po psihologiya, 2006, 2, 87-97.) | individual (adolescent age and gender)- and personality (aggression proneness, sensation seeking, achievement motivation)-related prerequisites for playing computer games | theoretical analysis | NA | 7 BG 2 DE (1 BG transl.) 15 EN (2 BG, 1 RU transl.) 8 ES 4 FR 2 RU |
| Kiryakov 2011: М. Киряков. Компютърните игри и тяхното влияние върху субективното благополучие на децата и младите хора. - Българско списание по психология, 2011, 3-4, 806-813. (M. Kiryakov. Kompyutarnite igri i tyahното vliyanie varhu subektivnoto blagopoluchie na detsata i mladite hora. - Balgarsko spisanie po psihologiya, 2011, 3-4, 806-813.) | influence of computers games on subjective well-being in young adults | semi-structured interview (mostly online) | BG | 2 BG 32 EN |

Table 1 (continued)

| <u>VR, AI, and Applications</u> | | | | | |
|--|---|----------------------|----|--|--|
| Netov 1977: И. Нетов. Психология, кибернетика и моделiranje. - Психология, 1977, 1, 13-21. (I. Netov. Psihologiya, kibernetika i modeliranje. - Psihologiya, 1977, 1, 13-21.) | psychological and methodological limitations of contemporary computers for modelling the human brain and its processes | theoretical analysis | NA | 5 RU (1 BG transl.) | |
| Bardov 2017: И. Бардов. Проблемът за психичното благополучие в контекста на виртуалната реалност. - Психологични изследвания, 20, 2017, 373-384. (I. Bardov. Problemat za psihichnoto v konteksta na virtualnata realnost. - Psihologichni izsledvaniya, 20, 2017, 373-384.) | factors influencing well-being in virtual reality settings | theoretical analysis | NA | 20 EN | |
| <u>Unclassified</u> | | | | | |
| Inchovski-Tarnin 2014: С. Инчовски-Търнин. Джендър пропаганда днес. Скрито въздействие върху представите за половите роли чрез онлайн медия: Vesti.bg / Netinfo. - Психологични изследвания, 16, 2014, 1, 87-104. (S. Inchovski-Tarnin. Dzhendar propaganda dnes. Skrito vazdeystvie varhu predstavite za polovite roli chrez onlayn mediya: Vesti.bg / Netinfo. - Psihologichni izsledvaniya, 16, 2014, 1, 87-104.) | online information media as means for deliberate and secret propagation of new gender roles | thematic analysis | BG | 12 BG 6 EN (5 BG transl.) 1 FR (BG transl.) 1 DE (BG transl.) | |
| Lyubanova 2012: В. Любенова. Връзките с обществеността и ролята им в преодоляването на различен тип кризи посредством социалните мрежи. - Психологични изследвания, 15, 2012, 2, 73-82. (V. Lyubanova. Vrazkite s obshtstvenostta i rolyata im v preodolyavaneto na razlichen tip krizi posredstvom socialnite mrezhii. - Psihologichni izsledvaniya, 15, 2012, 2, 73-82.) | transformation of the Internet and online social media from information to manipulation means— process and manifestations | theoretical analysis | NA | 7 BG 5 EN (BG transl.) 5 FR (3 BG, 2 RU transl.) 1 DE (BG translation) 1 IT (BG translation) | |
| Nikolova 2021: Р. Николова. Изследване на родителските нагласи към дистанционното обучение. - Българско списание по психология, 2021, 2, 258-266. (R. Nikolova. Izsledvane na roditelskite naglasi kam distancionnoto obuchenie. - Balgarsko spisanie po psihologiya, 2021, 2, 258-266.) | parental attitudes towards online education | survey (online) | BG | NA | |

Table 1 (continued)

Note. BG - Bulgarian, DE - German, EN - English, ES - Spanish, FR - French, IT - Italian, RU - Russian, NA - not available/none, transl. - translation.

^a Some research may have been conducted online but explicit indication regarding this is missing from the article texts.

^b Sample - sample nationality or language of the investigated material (e.g., text).

^c Literature count excludes obvious dictionary entries and includes websites reporting statistical data. In some cases the language of the original source could not be deducted with absolute certainty, but for the purposes of the present work it suffices to count such instances as foreign literature.

Table 2. Aggregated reviewed literature according to Ancis' (2020) categorization with article count, studied phenomena, and methods per category

| Category (According to Ancis 2020) | Article Count (% of total count) | Studied Phenomena | Methods |
|--|--|--|--|
| Online Behaviour and Personality ^a | 19 (45%) | virtual self, virtual identity self-presentation online first impressions online personality + online behaviour interaction + information sharing online cyberbullying unfriending virtual leadership | experiment (incl. online) survey (incl. online) semi-structured interview in-depth interview content analysis conceptual cluster analysis meta-analysis comparative analysis literature review theoretical analysis |
| Social Media Use and Psychological Functioning | 8 (19%) | characteristics of social media use time spent on social media + subjective experience, anxiety social media, cyberbullying, Internet addiction + well-being negative aspects of cyber communication | survey (incl. online) semi-structured interview theoretical analysis |

Table 2 (continued)

| | | | |
|-------------------------------|------------|---|--|
| Telepsychology | 7 (17%) | attitudes towards telepsychology advantages of + challenges for telepsychology (incl. during COVID-19) good practices in telepsychology | survey (incl. online) observational (incl. case study) literature review theoretical analysis |
| Games and Gaming ^a | 3 (7%) | computer game typology positive/negative aspects of + prerequisites for playing computer games computer games + well-being | survey semi-structured interview (incl. online) literature review theoretical analysis |
| VR, AI, and Applications | 2 (5%) | computer models of the human brain VR + well-being | theoretical analysis |
| Unclassified | 3 (7%) | online media as means for manipulation attitudes towards online education | survey (online) thematic analysis theoretical analysis |

Note. ^a Focus on children, adolescents, young people.

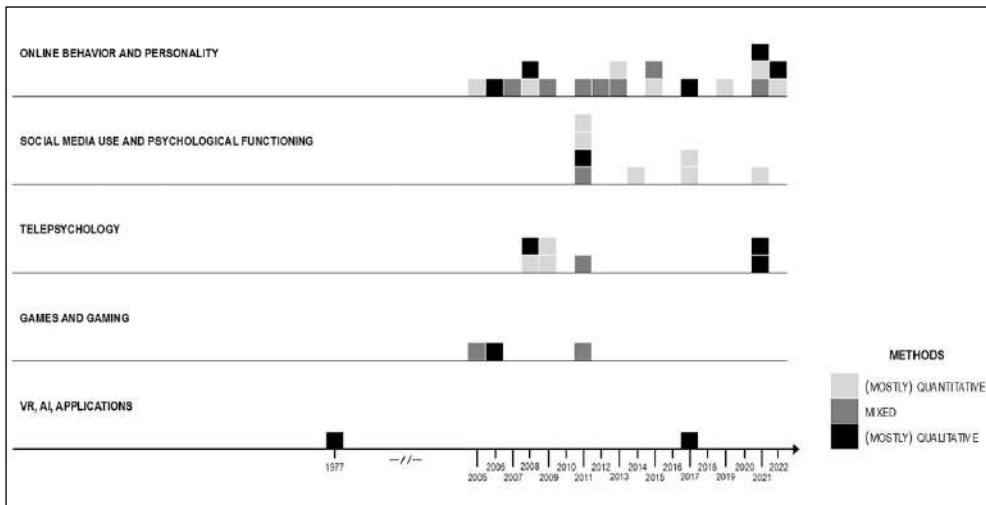


Fig. 2. Timeline of articles publication year and methodology type across Ancis' (2020) categories

Findings and synthesis

Topics

All five thematic categories outlined by Ancis (2020) were reflected in the reviewed literature, but to varying degrees (see Table 2 for summary and Table 1 for details). The most well-represented category was “Online Behaviour and Personality”, which constituted 45% of all studied articles and covered a wide range of investigated phenomena (e.g., virtual identity, self-presentation online, unfriending on online social networks, etc.). The second largest category was “Social Media Use and Psychological Functioning”, constituting 19% of the reviewed articles and covering topics such as time spent on social media, well-being, cyberbullying, etc. “Telepsychology” was another well-represented category (17% of all articles) and focused on attitudes towards, advantages of, and challenges for conducting psychological consulting over the Internet. “Games and Gaming” as well as “Virtual Reality, Artificial Intelligence, and Applications” were not so well-developed, adding up to 7% and 5% of the total amount of reviewed articles, respectively. The investigated topics falling with each of these two categories were rather few and not particularly current (e.g., typology of computer games, positive/negative aspects and prerequisites for playing computer games, limitations of computer models of the human brain). The remaining 7% of the studied articles dealt with topics clearly falling into the field of cyberpsychology, yet outside of the five Ancis’ categories and were therefore assigned to a sixth category, labelled “Unclassified”. Two of these articles investigated online media as means for mass manipulation and one investigated parental attitudes towards online education.

Overall, the largest thematic categories where the social and interactive components were emphasized (behaviour, personality, social media) covered multiple topics of current societal relevance, such as cyberbullying, online personas, subjective online experience and well-being, in line with the cyberpsychology research trends outlined by Ancis (2020) on a worldwide level. Several pressing topics, such as online dating and cybersecurity, were missing from the scope of the reviewed literature. The more technology-related categories (games, VR, AI, apps) did not cover a wide range of topics and were not particularly focused on current phenomena.

Outside of the scope of current cyberpsychology definition but undoubtedly contributing to the establishing and development of cyberpsychology research in Bulgaria are two other thematic categories - “Media” and “Automation and Human-Computer Interaction”. Strong focus within the “Media” category falls on media and culture (e.g., Bozhinova, Tair, Hashamova 2011; Stoitsova, Mizova 2011), media and body image (e.g., Aleksandrova-Karamanova 2012; Bozhinova, Aleksandrova-Karamanova 2013), media reality (e.g., Tair 2005a; Tair 2005b), media violence (e.g., Bozhinova, Tair 2008; Stoitsova 2006; Stoitsova 2009). Within the “Automation and Human-Computer Interaction” category, where research has primarily reflected the introduction of computers in various aspects of Bulgarian reality, emphasis is placed on computers and health/cognition (e.g., Ignatova, Stoyanova, Haralanov 2021; Shubert 1990; Tsanev 1988),

human factors/ergonomics (e.g., Naplatanov 1984), computers and education/training (e.g., Lazarova 1987), psychology of computerization (e.g., Tihomirov 1989), (negative) consequences of working with computers (e.g., Ivanova 1987a; Ivanova 1987b). The research falling into these categories addresses the interaction of humans with technology in the pre-cyberpsychology era and serves as a solid foundation for the cyberpsychology research covered in this review.

Methods

The methods used in the reviewed research are diverse (Tables 1 and 2) and vary with the respective research question. In general, the methodology is chosen appropriately, as recommended by Krantz (2018) and results in a satisfactory answer to the posed cyberpsychology research questions. Largely, the methods are standard for the field of psychology (with the balance slightly in favour of qualitative and mixed as opposed to quantitative methods, as seen in Fig. 2). The use of mixed or “convergent” methods has been shown to be particularly effective in the field of cyberpsychology (Schiano 1997). However, there are almost no instances of the use of experimental methods (Table 2) and/or emerging methods specific to cyberpsychology (Krantz 2018). In this respect the predominant methodology might be seen as slightly outdated in terms of its capabilities to capture the full range of information available in cyberpsychology processes. No use is made, for example, of the possibilities offered by recording and studying live or simulated online interactions in instant messaging platforms, etc. At the same time, the cyberpsychology phenomena that have been studied in Bulgaria so far do not necessarily require novel methodology. It is likely that the methodology will be updated with the introduction of leading-edge research questions addressing currently arising cyberpsychology phenomena. For instance, studying human interaction within VR settings or human-AI interaction would require novel convergent research methods, such as combinations of classical observation and survey with psychophysiology and motion data analysis. Finally, survey instruments specific to cyberpsychology phenomena have been adapted for (e.g., the Cyber victim and bullying scale or CVBS; Nikolova 2021) and specifically developed within and for Bulgarian settings (e.g., artistic self-presentation online; Milusheva, Zinovieva, Gaydazhieva 2019; Zinovieva, Kiryakov 2015). Such efforts add to the quality enhancement and methodological strengthening of cyberpsychology research in Bulgaria.

Samples

With very few exceptions research within the reviewed literature has been conducted using Bulgarian samples and within Bulgarian settings (Table 1). On the one hand, this is a definite advantage, as the resulting research builds a body of knowledge specific to cyberpsychology in a Bulgarian reality. On the other hand, there have been few to no attempts to bridge this reality to international observations. In a time in human history and in a field of science dealing with unprecedented levels of technologically enhanced human

interconnectedness isolating findings to a nation/country-level is a significant omission. The potential for intercultural research here is immense and deserves development.

Literature

The literature cited in the reviewed articles is mostly foreign, favouring English publications. This is unsurprising, given that the international language of science is presently English and most research worldwide is published in English. Following Bulgarian research tradition, several (mostly but not exclusively classical) psychology texts originally published in other Western European languages as well as in Russian are also present. Often, Bulgarian translations of both Western and Russian literature have been used. Most importantly, the reviewed articles cite other Bulgarian cyberpsychology literature, demonstrating awareness of the field's development and establishing a research tradition of acknowledgments and continuity. Information on the language of the cited literature for each article is available in Table 1.

Distribution over time

The distribution of Bulgarian cyberpsychology research over time (Fig. 2) is also quite informative. For “Online Behaviour and Personality” publications begin to appear in 2005 when the Internet and online communication have already been established as part of everyday reality. The stream of publications is steady until present day with research topics reflecting new online phenomena as they appear (e.g., first virtual identity, then online social networks, then cybervictimization, etc.). The flow of publications within the “Social Media and Psychological Functioning” category is a bit more sporadic with publications skipping a couple of years here and there, but also begins shortly after social media become prominent in Bulgaria and continues until now. “Telepsychology” marks a big sprout in 2008-2009 with the start of a large-scale research project (Yordanova 2011) but after that remains dormant until the COVID-19 pandemic when research interest in telepsychology peaks again (both on national and international level). “Games and Gaming” research has a few publications before and shortly after 2012 but has become inactive since. “Virtual Reality, Artificial Intelligence, and Applications” has one publication in the 1970s corresponding to a worldwide discussion of computer modelling of the human brain, and one publication from 2017 corresponding to international research interest in the connection between VR and well-being. Overall, with respect to timing, Bulgarian cyberpsychology research follows closely in the footsteps of international research in the field. The short delays between national and international research peaks could be explained by the time needed for technological implementation on a national level and mobilization of national research efforts from a small dedicated research community.

Further observations

One curious observation from the conducted review relates to the age of the investigated samples. In three of the article categories (“Online Behaviour and Personality”, “Social Media Use and Psychological Functioning”, “Games and Gaming”) the focus is largely on studying children, adolescents, and/or young people (see Table 2 for summary, Table 1 for specific examples from each category). Anchoring early cyberpsychology research in these age groups is logical, as they would have been the most likely consumers of the Internet and experienced its related phenomena at the time. However, with the passing of time and with technological advancement currently all age groups are well-represented among Internet consumers and research points towards peculiar age-related differences in online attitudes and behaviours (e.g., Kezer et al. 2016). Although Bulgarian research on such age-related phenomena does exist (e.g., Golovinska-Georgieva 2013; Jordanova et al. 2009; Vasileva et al. 2009), it is sporadic given the prevailing focus on earlier ages. Thus, interesting age-related cyberpsychology phenomena may have remained unaddressed in Bulgaria so far.

Another observation that merits attention is the lack of research focus on phenomena of currently pressing and/or emerging importance, such as, but not limited to, mobile phones, online dating, cybersickness, etc. Given the 5-10-year lag of Bulgarian cyberpsychology research noted earlier, this observation is not all that surprising, and it can safely be expected that research on these phenomena will pick up shortly. While such a delay may have been unavoidable in the early days of Bulgarian cyberpsychology research, presently it is no longer caused by technological availability, etc., but is rather due to the choice of the research questions and could easily be shortened and/or eliminated by motivated effort from the Bulgarian cyberpsychology research community.

Finally, multiple studies addressed the link between cyber phenomena and well-being. This finding could be easily explained by the strong interest in well-being within the Bulgarian psychology research community coinciding in time with the onset of cyberpsychology investigations.

Discussion

Summary

This work presents a review of Bulgarian cyberpsychology research published in the two major national psychology journals. Using Ancis’ (2020) categorization of international cyberpsychology research, the work discusses the thematic and temporal coverage, as well as central methodological aspects of the reviewed research.

All categories outlined by Ancis (2020) were present in the reviewed literature, with the ones emphasizing social and interactive aspects of the studied phenomena (e.g., self-presentation online) being well-represented and the ones focusing on technological aspects (e.g., gaming, VR) being under-represented. The methodology was generally well-suited to the research questions, but the

focus was on qualitative and mixed methods at the expense of quantitative and, in particular, experimental methods. With a few exceptions, the studied samples were Bulgarian, allowing a comprehensive view of Bulgarian cyberpsychology phenomena, but disallowing potentially interesting cross-cultural comparisons. The cited literature was mostly foreign (with predominance of English-language texts), but the reviewed articles also cited Bulgarian cyberpsychology research, establishing research tradition and strengthening the field on the national level. There was small but noticeable time lag between international and national publications for most thematic categories with current topics such as online dating, mobile phones, etc. remaining yet unaddressed. Additionally, strong research interest was present in children, adolescents, and young people, as well as in well-being.

Perspectives

Based on the observations from the conducted review, two central recommendations could be put forward to enable the sustainable future development of Bulgarian cyberpsychology research and its successful elevation to international impact level.

Leveraging uniqueness

To begin with, Bulgarian cyberpsychology research possesses several unique advantages which could and should be utilized strategically in the future. For example, the reviewed literature has demonstrated strong traditions in terms of both topics and methodology. Topics such as self-presentation online, cyber phenomena in earlier stages of life, online subjective experience and well-being, etc. are among the ones studied most comprehensively. The research community's capacity for conducting theoretical analyses, as well as for applying qualitative and mixed methodology, is solid. One way to use these strengths strategically is to utilize national funding to upgrade research infrastructure and specialize in them even further while at the same time bringing them up to date with international research. For example, a given research topic could be studied in its completeness in relation to phenomena of current significance (e.g., well-being and online dating apps), new methods could be developed using qualitative and mixed method foundation in combination with cyber methodology (e.g., adapting qualitative data collection and analyses method for VR settings and/or human-AI interaction). Another strategic approach for utilizing Bulgarian cyberpsychology research strengths would be to combine them with those of foreign teams in the form of international large-scale trans-disciplinary work (thus, being able to study cross-cultural phenomena and to rely on international expertise in underdeveloped areas). Naturally, the two approaches are by no means exclusive and could be combined in creative ways as necessary and/or possible to achieve *state-of-the-art methodology* and *high societal topic relevance* on international level.

Directed effort

Further boost of cyberpsychology research in Bulgaria could be achieved, as suggested by Dzhonev (2024), through directed effort. A *professional organization* or, initially, even a dedicated *division* in an already existing organization could stimulate community spirit, enable knowledge transfer, foster healthy competition, and establish common development goals. Such an initiative would also facilitate the leveraging of unique strengths discussed previously by streamlining research directives. The availability of community expertise and resources would provide solutions to the various problems faced by individual researchers and/or workgroups in their endeavours to achieve international impact. In a more long-term perspective, a specialized international *journal* managed by such a professional organization could also contribute to reaching international visibility and fostering worldwide collaboration.

Limitations

Like any other piece of academic work, the present text is not without flaws. First, the conducted review only studies peer-reviewed research articles published in the two major Bulgarian psychology journals, omitting in the process any doctoral theses and books relevant to the topic. Although to a certain extent this scope was necessary due to the ease-of-search and accessibility of the research, it was also intentionally chosen with the goal of covering focused research of the highest quality. Books on the topic, for example, are scarce, and, following Bulgarian scientific culture, typically come in the form of monographs, which can be too integrative for the purposes of the present work.

Next, the conducted review also omits cyberpsychology research conducted by Bulgarian scientists and published in international journals. In this way some of the studied research content may not have been reflected (e.g., Tsankova, Tair 2022), but at the same time this method allows for constructing a cleaner and more comprehensive image of cyberpsychology research conducted solely on the national level. As preliminary literature searches suggested that sources like the examples above are scarce, excluding them from the review enabled effective evaluation and recommendations for the majority of Bulgarian cyberpsychology research rather than the few exceptions.

Finally, the present work reflects the subjective viewpoints of the author who is a Bulgarian cyberpsychology researcher. Though presently this inherent bias could not be avoided, it could also be viewed as only an “insider” with solid international research experience could present a detailed view of the field and outline directions for its development.

Final remark

In short, Bulgarian cyberpsychology research rests on a solid foundation which could be strategically leveraged in its future growth. To be successful, this future growth needs to orient towards current topics and methodology and

strive (through a professional organization and journal) for international quality and impact.

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