PRZEGLĄD PSYCHOLOGICZNY – THE REVIEW OF PSYCHOLOGY
2024, TOM 67, NR 4, 123–133
DOI: 10.31648/przegldpsychologiczny.11290

Belief in Psychological Myths Among Students – A Comparison Between Psychology and Other Fields of Study

Agata Adamczyk
Medical University of Gdańsk
Faculty of Health Sciences with the Institute of Maritime and Tropical Medicine
https://orcid.org/0009-0007-9530-1947

Hanna Barakat
Medical University of Gdańsk
Faculty of Health Sciences with the Institute of Maritime and Tropical Medicine
https://orcid.org/0009-0004-4610-5745

Alicja Bejnar[1]
Medical University of Gdańsk
Faculty of Health Sciences with the Institute of Maritime and Tropical Medicine
https://orcid.org/0009-0002-6312-3684

Abstract

Objective: The popularization of unscientific content is becoming increasingly prevalent in the era of global internet access. Identifying and debunking psychological myths should be an essential part of the education of individuals training to become psychologists. This study examined whether there are differences in the identification of psychological myths between psychology students and students from other fields.

Method: The study included 331 participants, consisting of 132 psychology students and 199 students from other disciplines. A questionnaire based on the work of Lilienfeld et al. (2017) was used to measure belief in psychological myths. The questionnaire consisted of 17 statements – 10 myths and 7 facts – which participants assessed for their validity through an online survey. Data were analyzed using independent samples t-tests.

Results: Respondents' answers indicated a small difference in the average number of correct responses between psychology students and students from other fields, with a moderate effect size.

[1] Correspondence address: alicja.bejnar@gumed.edu.pl.

Conclusion: The results confirmed the hypothesis that psychology students are less likely to believe in psychological myths. However, the study also revealed that the incorrect identification of popular psychological myths is common among young people, indicating a need for educational intervention.

Keywords: psychological myths, students, comparison

Belief in Psychological Myths Among Students

The Spread of Misinformation

In today's world, the internet serves as the primary source of information, particularly for young people. This has ambiguous implications for the field of psychology. On one hand, the dissemination of psychological content through social media helps raise awareness about many phenomena. However, as Lewandowsky et al. (2012) demonstrated, the internet also facilitates the spread of misinformation. Numerous magazines, books, websites, and blogs have been created by individuals producing psychological content for years, gaining followers and being regarded as authorities in the field. Examples include websites featuring pseudopsychological tests (e.g., BuzzFeed, IDRlabs), books such as *Awaken the Giant Within* by Anthony Robbins, *Szczęśliwe związki* [*Happy Relationships*] and *Wyszłam z niemocy i depresji, ty też możesz* [*I got out of the helplessness and depression, You can too*] by Beata Pawlikowska, or the well-known *The Power of Your Subconscious Mind* by Joseph Murphy. Unfortunately, some creators lack specialized knowledge and fail to provide references for their claims, fostering the creation and spread of psychological myths – assertions not necessarily supported by empirical evidence and inconsistent with current scientific knowledge. While the popularization of psychological knowledge often requires simplification of concepts, myths frequently contradict the original intent and persist in popular culture for years as unchallenged truths.

The Problem of Authority

It is troubling that not only non-professionals but also experts in their fields exhibit a tendency to perpetuate belief in unscientific claims. For instance, 6% of neurologists believe that humans use only 10% of their brain capacity (Herculano-Houzel, 2002), nearly 81% of healthcare professionals assert that the full moon is associated with abnormal mental problems and increased patient admissions (Owens & McGowan, 2006), and 38% of students reported acquiring false beliefs from psychology courses or instructors (Landau & Bavaria, 2003). Commonly accepted "facts" can lead authorities to fall victim to cognitive biases, such as the availability heuristic. This makes debunking myths within society challenging, as they often become ingrained in beliefs rather than rooted in knowledge.

Efforts to address the issue of mindful spreading of psychological knowledge have been ongoing in the academic community for some time. One notable

example is the 2007 provocation in the magazine *Charaktery* [*Characters*], where Tomasz Witkowski (under the pseudonym Renata Aulagnier) described an innovative therapy method based on the hypothesis of morphic resonance, which had no scientific basis. Despite the magazine's focus on psychology and a scientific editorial board, the article was published without verification (Witkowski, 2007).

The profession of a psychologist carries a unique responsibility. Psychologists are obligated, under the *Kodeks etyczny psychologa* [*Psychologist's code of ethics*] (Polish Psychological Society, 2018), to use current knowledge, ensure societal well-being, and take responsibility for the consequences of their actions. The spreading of unreliable information by specialists affects not only their professional activities but also public trust in psychology as a science.

It is crucial to teach critical thinking and emphasize the value of empirical evidence early in the education of future psychologists. Educators must recognize that incoming psychology students often bring with them a pre-existing body of knowledge, often of a popular-scientific nature or "folk wisdom." Psychology students' susceptibility to believing unscientific claims may result in ineffective and socially harmful professional practices. Awareness of the scale of this phenomenon is essential, and if such beliefs prove widespread, efforts should focus on enhancing critical reasoning skills and distinguishing scientific sources from non-scientific ones as part of psychology curricula.

Psychological Myths in Scientific Literature

The issue of belief in psychological myths has appeared in scientific literature for decades, with psychology students often serving as a key research population (Furnham & Hughes, 2014; Gaze, 2014; Glass et al., 2008; Hughes et al., 2015; Kowalski et al., 2016; LaCaille, 2015; Rodríguez-Prada et al., 2022; Standing & Huber, 2003; Swami et al., 2014). Bensley et al. (2014) even developed a specialized tool to measure psychological knowledge and belief in myths. However, most existing studies rely on questionnaires derived from the book by Lilienfeld et al. (2017), *50 Great Myths of Popular Psychology*, which compiles the most common psychological myths.

Factors Associated with Belief in Psychological Myths

Hughes et al. (2015) examined the prevalence of belief in psychological myths among a large international sample of psychology students. They found that students at earlier stages of their education struggled more to identify false claims compared to those preparing doctoral dissertations. Similar results were obtained by Gaze (2014), though some myths, such as the idea that hypnosis can uncover repressed traumatic childhood memories, were endorsed by 76% of respondents, even among advanced students. Comparisons between the general population and psychology students revealed that while psychology students identified more

myths correctly, the difference was small (Furnham & Hughes, 2014). Higher academic standing and in-person classes reduced belief in myths among Spanish psychology students, though they frequently selected "I don't know," indicating uncertainty and a lack of knowledge (Rodríguez-Prada et al., 2022). Swami et al. (2014) found that studying social sciences correlated with less belief in myths compared to studying non-social disciplines. Higher grades and more coursework, particularly in methodology, promoted skeptical thinking. Conversely, attending psychology classes early in education was associated with greater belief in myths (Standing & Huber, 2003). Gaze (2014) found no difference in myth belief between students who had previously attended psychology workshops and those who had not. The source of information also seemed significant; advanced students cited university lectures, while younger students relied on personal experience (Gaze, 2014). Referencing materials from journals, the internet, or television increased belief in myths, whereas knowledge from lectures, books, or scientific articles correlated with better myth identification (Kowalski et al., 2016).

Educational Interventions

Completing an introductory psychology course alone does not suffice to correctly identify unscientific claims. Even when many of these claims are discussed during classes, students often continue to provide incorrect answers (Gaze, 2014). However, students who participated in courses emphasizing scientific approaches in psychology demonstrated significantly greater ability to identify myths compared to before taking these classes, particularly for content that was thoroughly analyzed during the course (Swami et al., 2014). Glass et al. (2008) found that completing a small number of psychology courses did not reduce belief in myths; only taking over ten courses appeared to have an impact. An effective method for debunking widely accepted misconceptions among psychology students was active participation in a university campaign – senior students created presentations and posters about myths and presented them to their junior peers. Both groups showed reduced belief in myths compared to control groups and found the experience engaging (LaCaille, 2015).

Studies show that psychology students have a limited ability to correctly recognize myths. This may result from years of exposure to unscientific psychological "truths" popularized by mass media or simply existing in pop culture, as well as beliefs repeated in schools or within families. Perhaps this knowledge is resistant to several years of psychological studies, and more effective methods should be introduced to combat it. Nevertheless, the key issue is awareness of the scale of this phenomenon.

Original Study

So far, only one study on the Polish population has been conducted on this topic, but it included only psychology students at various stages of education

(Kowalski et al., 2016). No attempt was made to compare psychology students with students from other fields. The aim of the present study was to determine whether there are differences between psychology students and students from other disciplines in identifying psychological myths. Our hypothesis stated that the group of psychology students would be less inclined to endorse non-empirical claims compared to students from other fields.

Method

Participants

Based on prior studies conducted in this field (Furnham & Hughes, 2014; Kowalski et al., 2016; Swami et al., 2014), we anticipated an effect size of approximately 0.25, necessitating a sample of 320 participants to achieve a statistical power of at least 0.6 (Faul et al., 2007).

Our raw data included responses from 335 individuals, 4 of whom were excluded as they did not provide final consent for their responses to be used. Therefore, the final sample comprised 331 participants aged 18–47 years (M = 21.09, SD = 4.06), including 211 women, 111 men, and 9 individuals who chose not to disclose their gender. Among these, 132 were psychology students, and 199 were students from other disciplines. The participants were drawn from various universities and were studying at different levels (see Table 1).

Table 1

Number of Participants by Mode of Study and Academic Year

Type of study	Year of study				
	1st	2nd	3rd	4th	5th
3-year BA programs	88	34	13	–	–
2-year MA programs	12	4	–	–	–
Uniform Master's studies or 6 years	156	10	5	7	2

Materials and Procedure

The study utilized an online questionnaire designed to measure belief in psychological myths. Prior to participation, respondents were presented with an informed consent form outlining their role in the study and their right to withdraw at any time. Following consent, participants provided basic demographic information, including gender, age, field of study, mode of study, and year of study.

The questionnaire was adapted from the work of Lilienfeld et al. (2017) and comprised 17 psychological statements: 10 myths and 7 facts (see Table 2, pp. 129–130). Participants were asked to assess whether each statement was true or false using a binary scale. To minimize response biases, the statements were presented in a randomized order. To enhance the educational value of the questionnaire, participants were provided with explanations and references for each statement after completing the survey, with a disclaimer requesting that they not share the information until the study concluded.

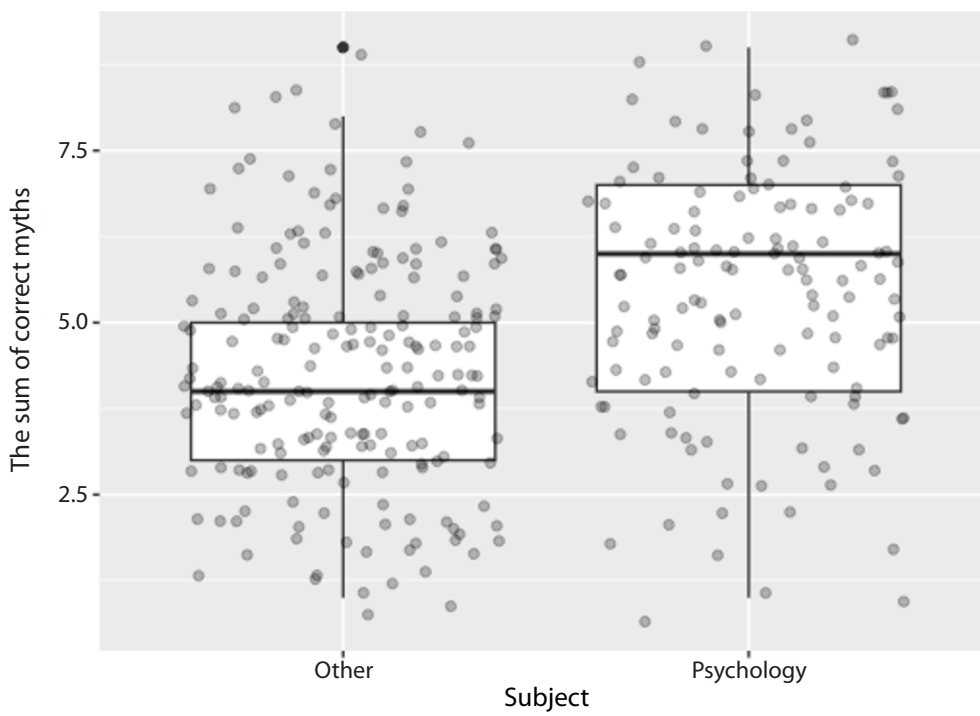
Data Analysis

Independent samples t-tests were conducted to compare belief in myths between psychology students and students from other fields. All analyses were performed using the R software (R Core Team, 2022) and relevant packages, including *tidyverse* (Wickham & RStudio, 2023) and *psych* (Revelle, 2023).

Results

Figure 1

Boxplot of Questionnaire Results by Field of Study



The total number of correct answers was used to assess belief in psychological myths. Correctly identifying all ten myths yielded a maximum possible score of 10. No participant achieved a perfect score. The mean number of correct answers across all participants was 4.74 (SD = 1.82). Welch's t-test revealed a statistically significant difference between psychology students and students from other fields in identifying myths (df = 270.78): t = –5.53, p < .001, 95% CI [–1.48, –0.70]. Psychology students achieved higher scores (M = 5.4, SD = 1.8) compared to non-psychology students (M = 4.3, SD = 1.7) (see Figure 1, p. 128).

Effect size, measured using Cohen's d, was 0.63, indicating a moderate difference. Psychology students performed better on every question. The mean scores for each question, grouped by field of study, are presented in Table 2 (entire questionnaire) and Figure 2 (p. 130) (only myths). Table 3 (p. 130) presents the descriptive statistics of the participants' results. The data shown in Figure 2 indicate that psychology students and students from other fields performed worst on question four (see Table 2).

Table 2

Questionnaire Items and Mean Correct Responses

Lp.	Statement	Mean correct responses (%)		
		All	Psychology	Other
1.	We use only 10% of our brain capacity.	68.3	75.8	63.3
2.	Each person has one dominant brain hemisphere (right or left).	43.8	56.1	35.7
3.	Subliminal messages (e.g., inserting single frames of an advertisement into a movie) can effectively persuade people to buy a product.	27.8	28.8	27.1
4.	Some people learn better through auditory methods ("auditory learners"), while others learn better through visual methods ("visual learners").	12.7	18.2	9
5.	When unsure of an answer on a test, it's better to trust your intuition.	22.1	28.8	17.6
6.	Opposites attract –we form close relationships with people who are different from us.	74	81.1	69.3
7.	Polygraph tests ("lie detectors") are a reliable method for detecting deception.	94.3	97	92.5
8.	The more bystanders there are in an emergency, the more likely someone will help.	80.7	90.9	73.9
9.	Adolescence is inherently associated with emotional turmoil.	18.7	21.2	17.1
10.	Women speak more words per day than men.	31.4	41.7	24.6
11.	Venting anger on an object provokes further aggression.	37.8	47.7	31.2
12.	Social rejection activates the same brain areas as physical pain.	82.8	89.4	78.4

Lp.	Statement	Mean correct responses (%)		
		All	Psychology	Other
13.	There is no scientific evidence for the symbolic meaning of dreams.	66.2	70.5	63.3
14.	Happiness depends mainly on internal factors (our predispositions) rather than external circumstances.	39.6	37.9	41
15.	A person under hypnosis can actively resist the hypnotist's suggestions.	46.5	43.2	48.7
16.	Scents trigger emotions and memories.	96.7	97	96.5
17.	What we have experienced in the past influences our perception of the present.	99.1	100	98.5

Table 3

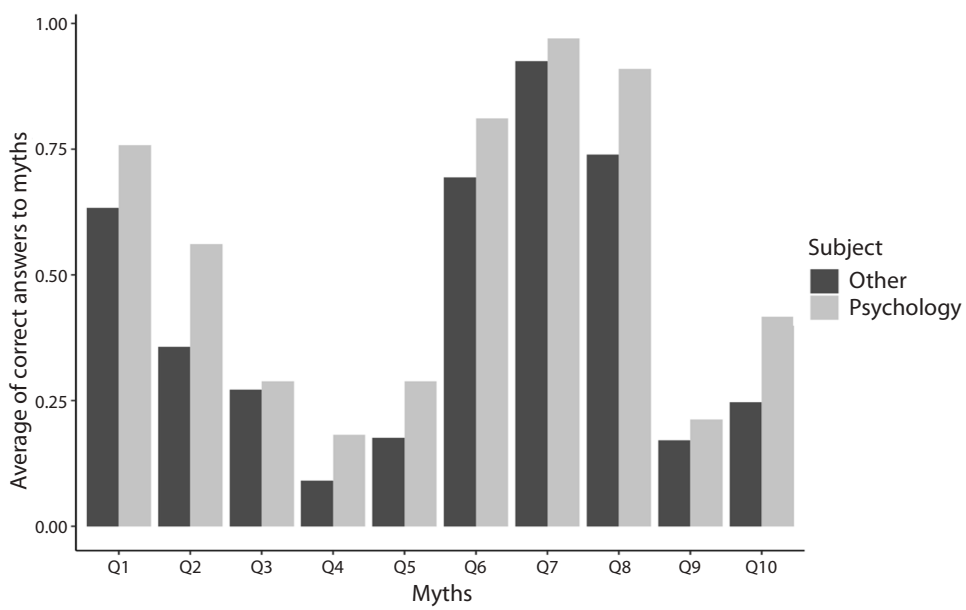
Descriptive Statistics by Field of Study

Field of study	*M*	*SD*	*Min.*	*Max.*
Other	4.30	1.70	1	9
Psychology	5.39	1.79	1	9

Note. "Min." indicates the minimum number of correctly identified myths, while "Max." represents the maximum.

Figure 2

Mean of Correct Answers for Each Question by Field of Study



Discussion

Interpretation of the Results

As a conclusion, we can assume that our hypothesis – that psychology students would be less likely to endorse non-empirical claims compared to students from other fields – was confirmed. On average, psychology students made nearly two fewer errors than students from other disciplines (see Table 2, pp. 129–130). On a scale of ten myths to identify, psychology students provided, on average, 19% more correct answers. Additionally, they performed better on every question (see Figure 1, p. 128).

Based on the literature, we initially expected a very small effect size. However, the final value we obtained was moderate. Therefore, we can generalize the results to Polish students with only a small degree of uncertainty.

Limitations

The majority of participants were first-year students (256 out of 331), which may have significantly influenced our results. In future replications, we recommend examining a more diverse sample in this regard. Another limitation of the study was the lack of a randomized group, which was related to the method of distributing the online survey among acquaintances.

The questionnaire we used was not validated; however, it was based on tools previously utilized in this field. In the future, if access to a specialized questionnaire for measuring belief in psychological myths remains unavailable, attention should be given to its validity and reliability using Cronbach's alpha test and the test-retest method.

Implications

The results we obtained suggest that psychology students are less likely to believe in psychological myths compared to students from other fields. This is a positive finding, as they are the future professionals in psychology and should possess up-to-date knowledge while maintaining a skeptical approach toward popular science beliefs. However, a significant portion of the myths included in the questionnaire received support from the participants. The average score on the questionnaire was alarmingly low, and most responses were incorrect, indicating a potential need for educational interventions in this area among both psychology and non-psychology students.

It would be appropriate to introduce a standardized curriculum for the methodology course, understood as an empirical approach to reality rather than merely the history of the field and statistical analysis methods. It seems justified for this course to be offered in full capacity during the early years of study to correct harmful knowledge at the beginning of the educational path. Teaching critical

thinking skills and equipping students with tools to verify the information they acquire would help them build their future knowledge on scientific foundations.

Notably, participants enthusiastically received the myth explanations presented in the questionnaire. Some expressed a willingness to attend elective courses related to our study's topic if such opportunities were available. Conducting these courses in a practical format, engaging students rather than focusing solely on lectures, would be beneficial. Their scope could include enhancing skills in recognizing fake news, verifying information sources, utilizing scientific databases, and debunking culturally ingrained psychological myths. The feedback from participants was impressive – they asked additional questions, sought to explore psychological myths further, and requested recommendations for relevant scientific articles. This suggests an optimistic outlook: psychology content consumers also recognize the value of evidence-based knowledge.

Bibliography

Bensley, D. A., Lilienfeld, S. O. & Powell, L. A. (2014). A new measure of psychological misconceptions: Relations with academic background, critical thinking, and acceptance of paranormal and pseudoscientific claims. *Learning and Individual Differences*, *36*, 9–18. https://doi.org/10.1016/j.lindif.2014.07.009

Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Furnham, A. & Hughes, D. J. (2014). Myths and Misconceptions in Popular Psychology: Comparing Psychology Students and the General Public. *Teaching of Psychology*, *41*(3), 256–261. https://doi.org/10.1177/0098628314537984

Gaze, C. M. (2014). Popular psychological myths: A comparison of students' beliefs across the psychology major. *Journal of the Scholarship of Teaching and Learning*, *14*(2), 46–60. https://doi.org/10.14434/josotl.v14i2.3931

Glass, L., Bartels, J. M., Ryan, J. J. & Stark-Wroblewski, K. (2008). The Effectiveness of Psychology Courses at Disconfirming Common Psychological Myths. *Individual Differences Research*, *6*(2), 96–103.

Herculano-Houzel, S. (2002). Do You Know Your Brain? A Survey on Public Neuroscience Literacy at the Closing of the Decade of the Brain. *The Neuroscientist*, *8*(2), 98–110. https://doi.org/10.1177/107385840200800206

Hughes, S., Lyddy, F., Kaplan, R., Nichols, A. L., Miller, H., Saad, C. G., Dukes, K. & Lynch, A.-J. (2015). Highly Prevalent but Not Always Persistent: Undergraduate and Graduate Student's Misconceptions About Psychology. *Teaching of Psychology*, *42*(1), 34–42. https://doi.org/10.1177/0098628314562677

Kowalski, J., Litwin, P., Pankowski, D. & Cierpka, A. (2016). Mity psychologiczne wśród studentów psychologii [Psychological myths among psychology students]. *Edukacja* [*Education*], *2*(137), 100–112.

LaCaille, R. (2015). Two Birds With One Myth-Debunking Campaign: Engaging Students to Target Psychological Misconceptions. *Teaching of Psychology*, *42*(4), 323–329. https://doi.org/10.1177/0098628315603066

Landau, J. D. & Bavaria, A. J. (2003). Does Deliberate Source Monitoring Reduce Students' Misconceptions about Psychology? *Teaching of Psychology*, *30*(4), 311–314.

Lewandowsky, S., Ecker, U. K. H., Seifert, C. M., Schwarz, N. & Cook, J. (2012). Misinformation and Its Correction: Continued Influence and Successful Debiasing. *Psychological Science in the Public Interest*, *13*(3), 106–131. https://doi.org/10.1177/1529100612451018

Lilienfeld, S. O., Lynn, S. J., Ruscio, J. & Beyerstein, B. L. (2017). *50 wielkich mitów psychologii popularnej. Półprawdy, ćwierćprawdy i kompletne bzdury* [*50 great myths of popular psychology: shattering widespread misconceptions about human behavior*], D. Sagan, Transl. (2nd ed., revised version). Wydawnictwo CiS.

Owens, M. & McGowan, I. W. (2006). Madness and the Moon: The Lunar Cycle and Psychopathology. *German Journal of Psychiatry*, *9*(3), 123–127.

Polish Psychological Society. (2018). *Kodeks etyczny psychologa* [*Psychologist's code of ethics*]. PTP. https://psych.org.pl/dla-psychologow/kodeks-etyczny

R Core Team. (2022). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna. https://www.R-project.org/

Revelle, W. (2023) psych: *Procedures for Personality and Psychological Research*. Software. https://CRAN.R-project.org/package=psych

Rodríguez-Prada, C., Orgaz, C. & Cubillas, C. P. (2022). Myths in psychology: Psychological misconceptions among Spanish psychology students. *PeerJ*, *10*, e13811. https://doi.org/10.7717/peerj.13811

Standing, L. G. & Huber, H. (2003). Do Psychology Courses Reduce Belief in Psychological Myths? *Social Behavior and Personality: An International Journal*, *31*(6), 585–592. https://doi.org/10.2224/sbp.2003.31.6.585

Swami, V., Tran, U., Thorn, L., Nader, I., von Nordheim, L., Pietschnig, J., Stieger, S., Husbands, D. & Voracek, M. (2014). Are the Scope and Nature of Psychology Properly Understood? An Examination of Belief in Myths of Popular Psychology Among University Students. *SSRN Electronic Journal*, 1–35. https://doi.org/10.2139/ssrn.2523661

Wickham, H., Averick, M., Bryan, J., Chang, W., D'Agostino McGowan, L., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., Takahashi, K. & […] Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, *4*(43), Article 1686. https://doi.org/10.21105/joss.01686

Witkowski, T. (2007). Modne bzdury wciąż modne [Fashionable nonsense is still fashionable]. *Kwartalnik Nauka* [*Quarterly Science*], *4*, 149–157.