School of
Health Sciences

# Unconscious Bias – Hidden Risk to Patient Safety

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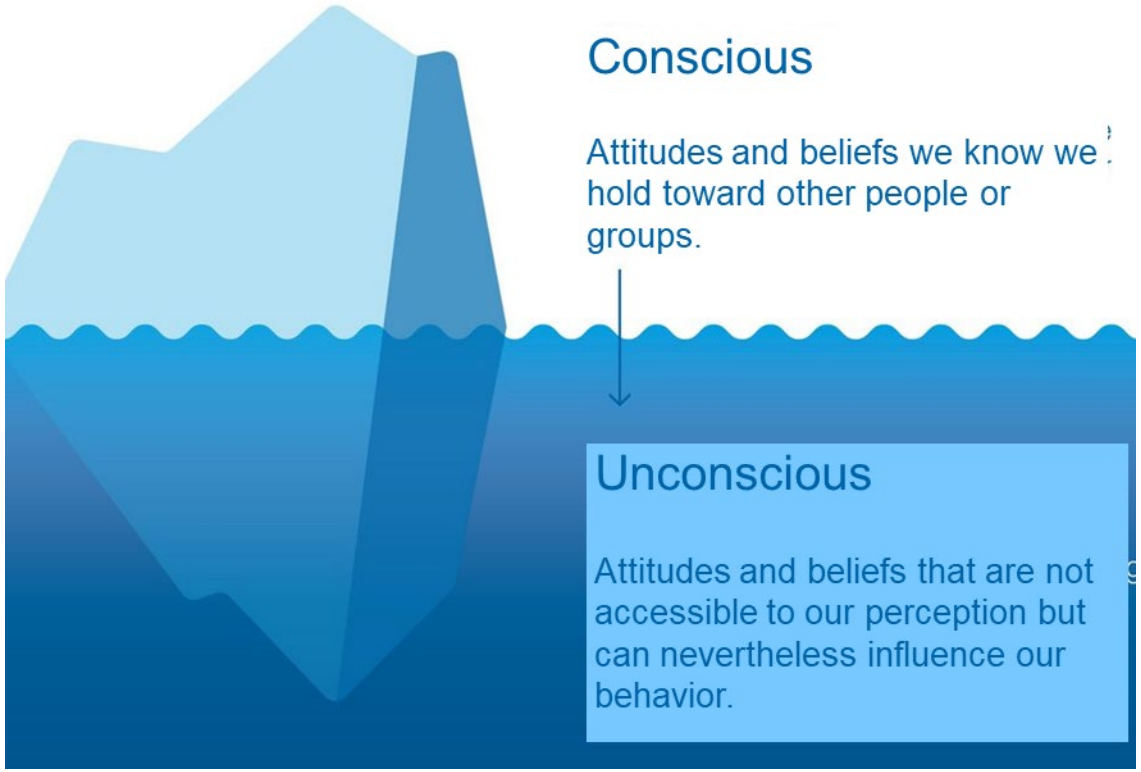

# Programm

What is unconscious bias?

What unconscious biases exist?

What do we know about unconscious bias in health care?

Why is it relevant and what are the implications for patients?

What can we do against unconscious biases?


Source: https://www.iamcp.org/news/512304/Unconscious-Bias-Training.htm

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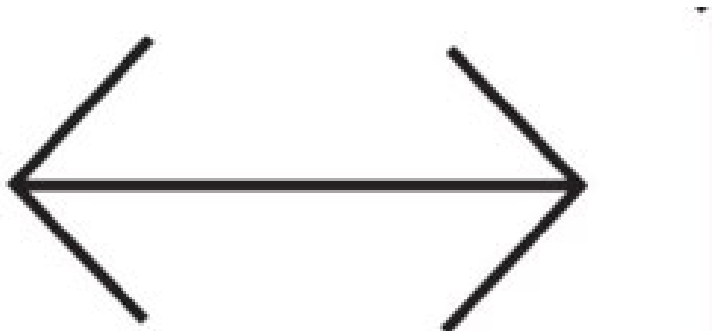
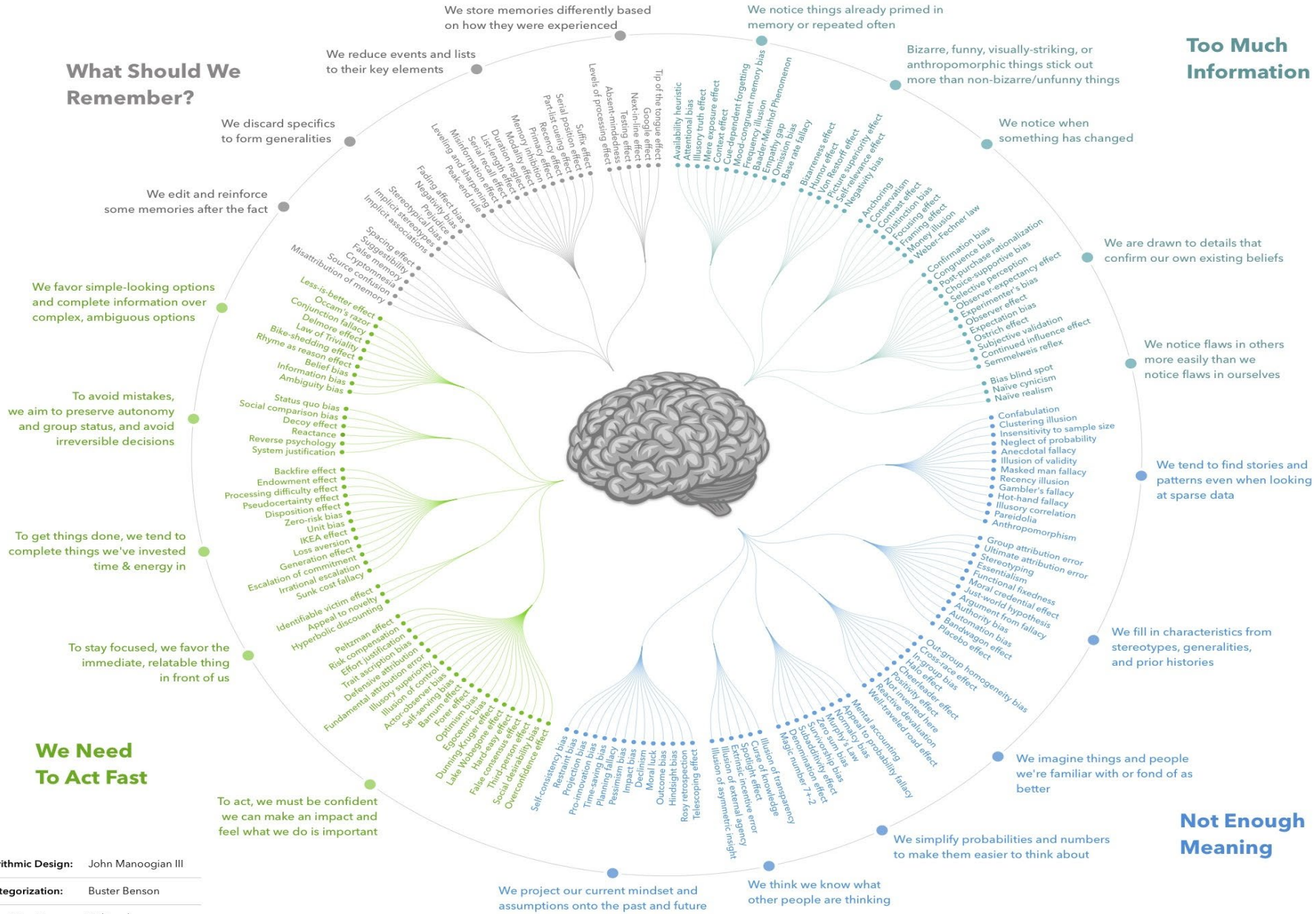


# COGNITIVE BIAS CODEX




| | |
|---|---|
| **Visual & Algorithmic Design:** | John Manoogian III |
| **Concept & Categorization:** | Buster Benson |
| **List of 188 Cognitive Biases:** | Wikipedia |

**designhacks.co**

# Some Biases that we encounter in Everyday Life

**Halo-horn effect:** we **infer from known characteristics** of a person **to unknown** characteristics of that person, even if they have **nothing to do with each other.**

For example, if we like someone, this can have a positive influence (halo) on our evaluation of a performance of that person. The opposite is the case if we dislike the person (Horn) and judge the performance negatively. (Nisbett & Wilson, 1977, Gräf & Unkelbach, 2018)

**Conformity bias:** we do and believe things because **other people** do or believe them. (Nickerson, 1998; Hart et al. 2009)

# Definitions

**Bias** the term is used to describe a tendency to favor one group over another.

**Unconscious bias** describes associations or attitudes that **unconsciously influence** a person's perception and therefore often go unrecognized by the person.

**Conscious bias** is bias that is accessible to the conscious mind and is based on a person's discriminatory beliefs and values and can be deliberate in nature.

**Stereotypes** are a set of cognitive generalizations (e.g., beliefs, expectations) about characteristics and attributes of members of a group. Stereotypes simplify and accelerate perceptions and judgments. They are often exaggerated, more negative than positive and are not revised even when people encounter individuals who don't correspond to the stereotype. (Marcelin et al. 2019, Fitzgerald & Hurst, 2017).

# Effect of Unconscious Bias / Stereotypes

- Unconscious stereotypes often influence our thoughts, expectations and actions below our perception threshold.
- They can help us to categorize things and react quickly.
- They relieve us of the need for in-depth analysis and decision making.
- However, this way of thinking is prone to error.
- It can lead to micro aggression.

# Mechanisms at Work also in Health Care

- Health professionals seem to apply stereotypes to patients' **superficial characteristics**. E.g. appearance, gender, diagnosis…
- They then derive their **expectations** towards patients from those characteristics.
- These expectations in turn influence their **communication**, choice of **recommendations** for treatments and **prescriptions**.
- Patients in turn **trust** GPs with an unconscious bias **less** and are **less adherent** to treatments (Penner et al., 2016).
- Unconscious biases form expectations and translate into possible consequences for patients (Meidert et al. 2023).

## The Consequences are that…

- Doctors **take less time** for people with dark skin color, ask less questions, show more verbal dominance (Cooper et al., 2003) and make less eye contact (Dovidio et al., 2002).
- Dentists make different **treatment recommendations** according to patients' skin color (Brignardello-Petersen, 2019).
- Nurses are more likely to assess back pain in **female** patients as **psychologically** caused than in male patients with identical case descriptions (Bernardes & Lima, 2011) and **prescribe pain medicine differently** to female patients according to skin color (Drweki, 2011).
- Patients with **foreign names** are more likely to be prescribed medication in an identical case description than patients with local names (Lepièce et al., 2014).
- Patients with **low socio-economic** status tend to receive less and less priority for referrals (Nymo et al. 2018).

## Possible Bias Triggers

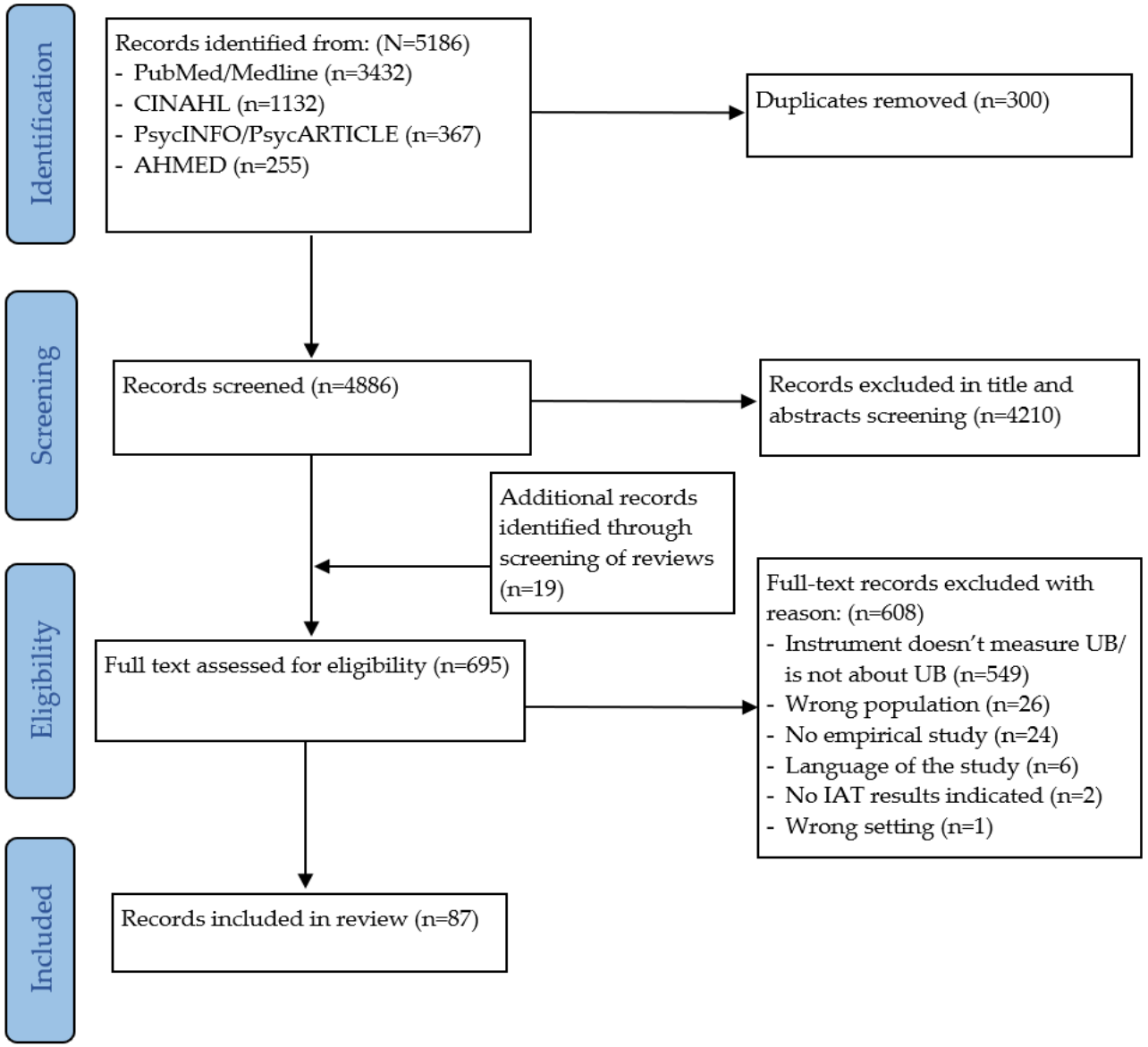
- **Clothing:** headscarf or headgear, ill fitting, expensive, brands, jewellerie etc.
- **Bodily appearance:** beard, size, weight, glasses, tattoos
- **Names:** foreign or unfamiliar names
- **Authority:** title, function or lack thereof, affiliation to a known institution/ authority
- **Place of residence:** “Goldküste” or “Langstrasse”
- **Vocal expression:** broken German or accent, health literacy, academic speech
- **Disabilities & aids:** wheelchair, hearing aid
- **Diagnosis:** HIV, Schizophrenia

# Mesuring Unconscious Bias

**Reaction time tasks:** Instruments that measure the strength of associations between concepts (e.g., race, gender) and evaluations (e.g., good, bad). It reveals implicit attitudes or preferences that people may not be aware of or may not wish to disclose. E.g. IAT, Go/No-Go Task

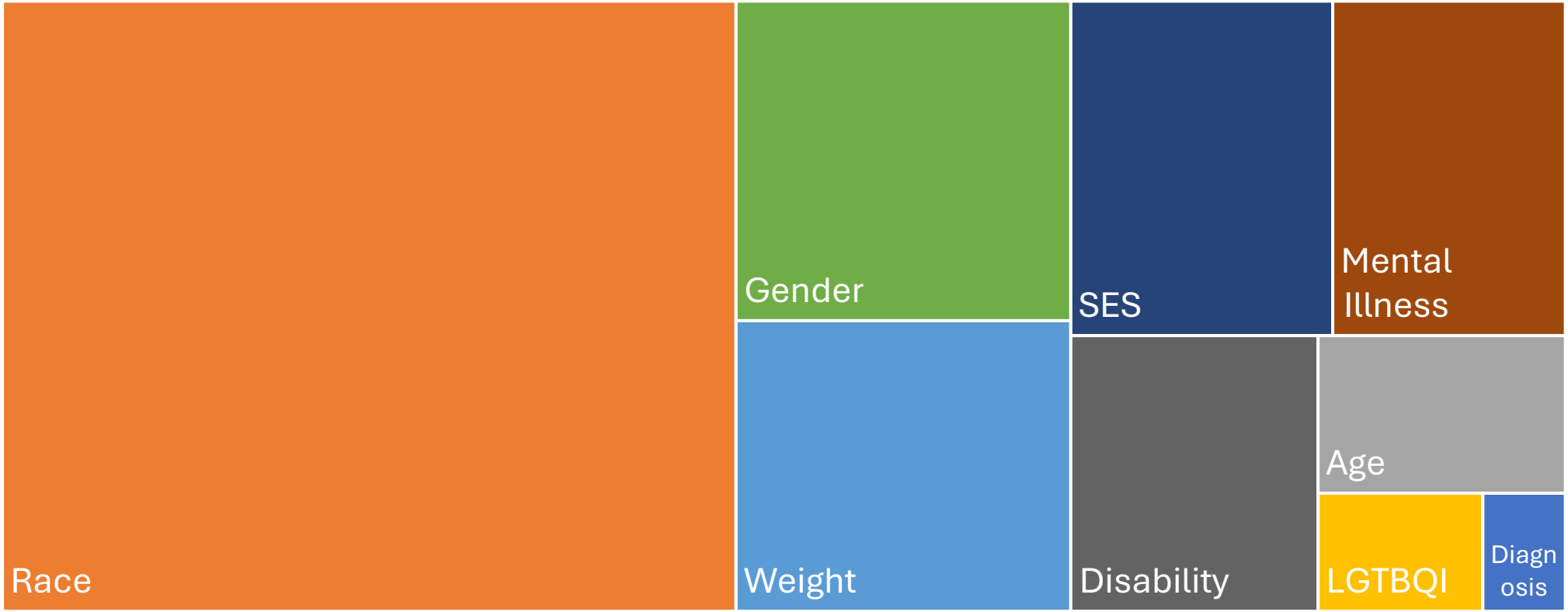
**Vignette studies:** participants are presented with short, descriptive scenarios (vignettes) and asked to respond to questions or make a judgment. They explore attitudes, beliefs, or decision-making processes in controlled, hypothetical situations. This method allows researchers to manipulate specific variables while maintaining a realistic context.

# Scoping Review on Unconscious Bias (Meidert et al. 2023)

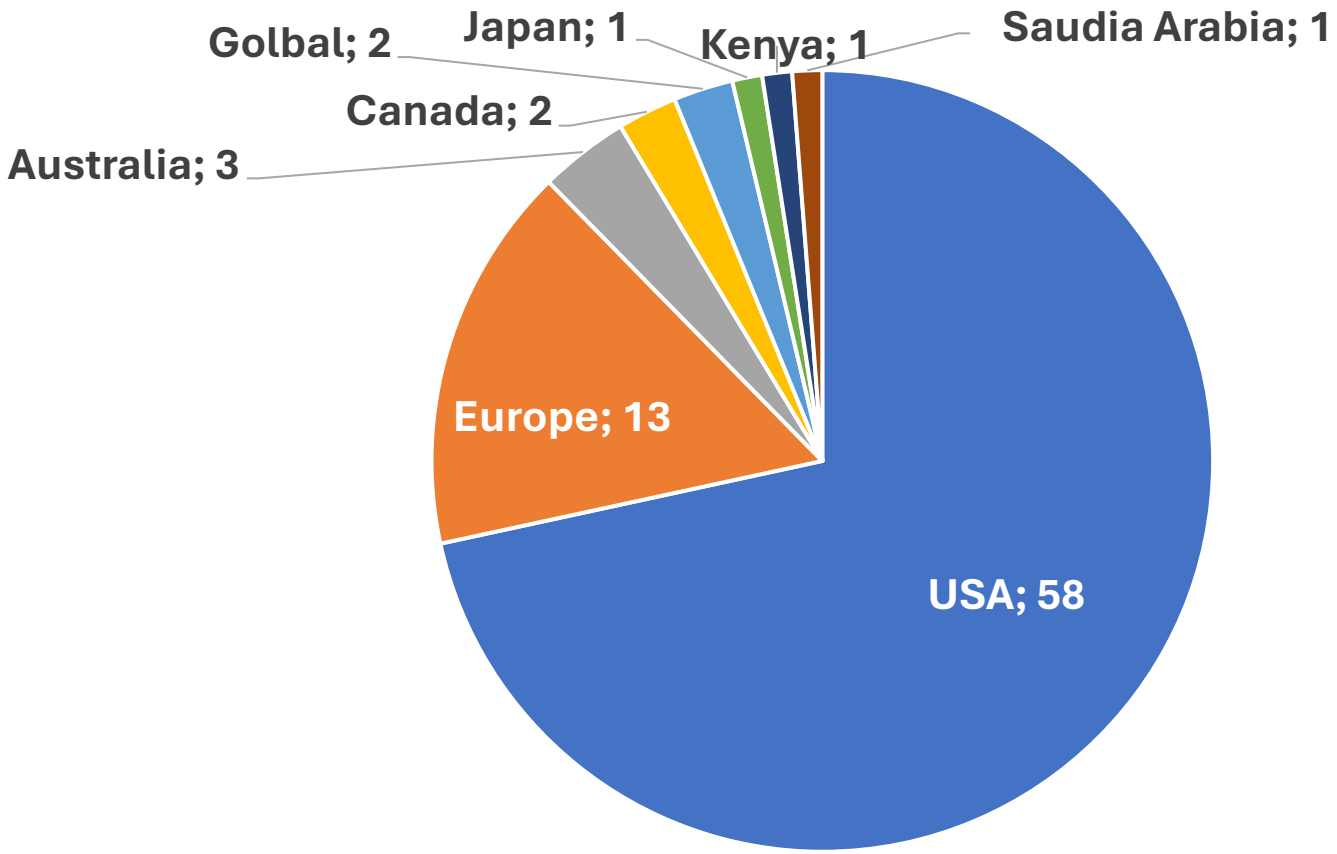



- 87 records included from 81 original studies
- 58'908 health professionals participated in the studies
- 97 biases assessed
- 55 studies used a reaction time task such as IAT
- 46 studies used vignettes

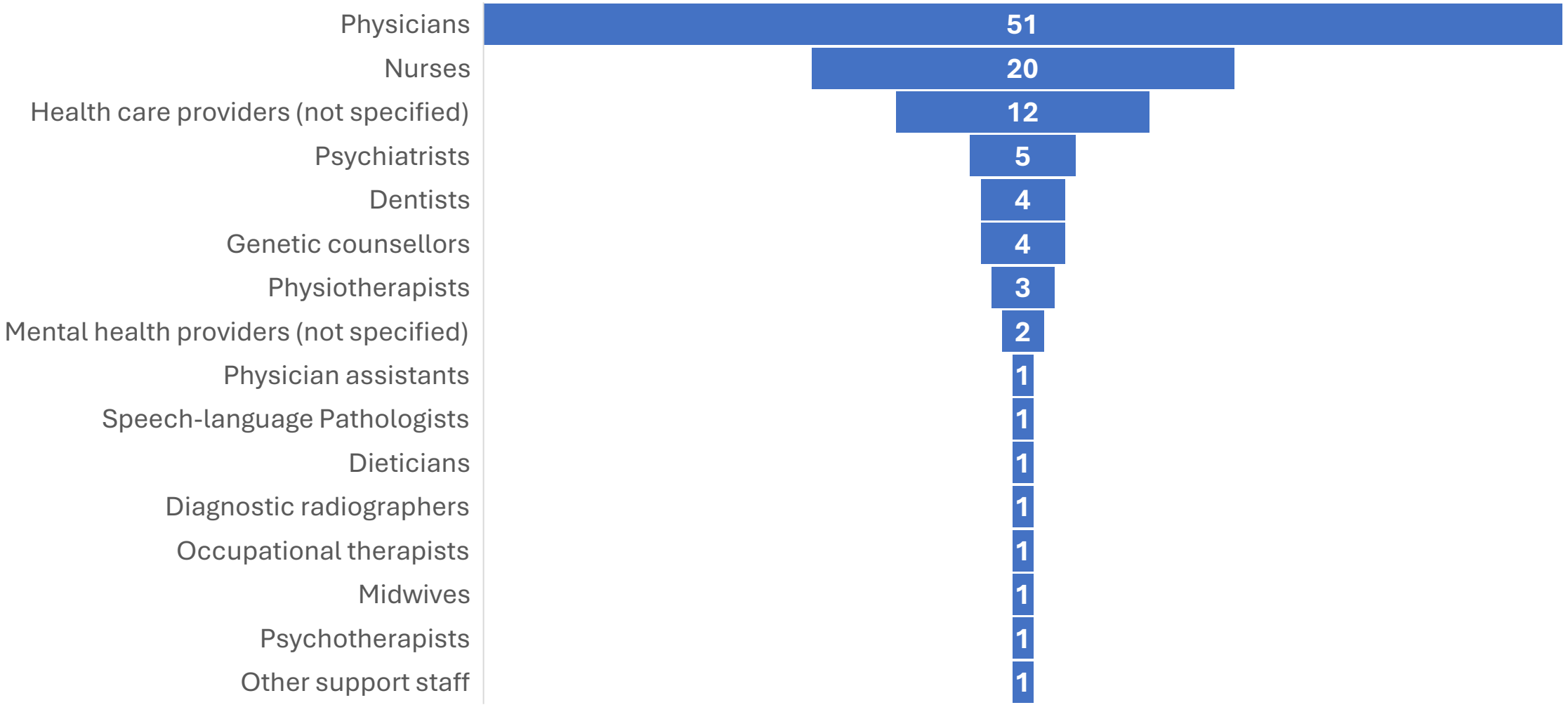
# Types of Unconscious Biases Assessed



# Regions where Unconscious Biases were Assessed



# Assessed Health Professions



## Findings

- 70 studies **found some type of unconscious bias** against minorities
- 2 studies found unconscious bias against individuals of majority population
- 11 studies found no unconscious bias
- More bias was found in reaction time tests (53 out of 55 studies) than in vignette-studies (33 out of 44 studies)
- Studies which used some type of intervention, showed that bias can be **reduced** by exercises such as perspective taking, empathy building or exchanging information in real time with other health professionals

# Do Students of Health Professions have Unconscious Bias in Switzerland?

Online-survey with students of health professions (n=422) in 2024 at the ZHAW using vignettes and an IAT on sexual orientation.

**Mr./Mrs. Hafner/Kumarsami** ist **29/63** years old, lives in the region, works as a **financial specialist/temporary help** in the insurance sector and in hospitalized due to a **physical/mental** illness.

And IAT

# Research with Students of Health Professions in Switzerland

- Students **showed no implicit bias in vignettes:** gender, SES, sexual orientation, migrant background, age, type of diagnosis**.**
- Students showed **no implicit bias in IAT** on sexual orientation.
- **Explicit attitudes** are **more favorable of vulnerable groups/minorities**, e.g., foreigners or people with low socio-economic status.
- There was **no difference** in programme, year of study, work experience, age or gender.

(Meidert et al., submitted to BMC Medical Education)

# Students Observation

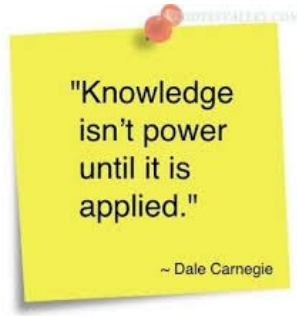
***"Have you ever observed other healthcare professionals treating patients/clients unequally, in a demeaning, or discriminatory manner?"***

- **49.8%** (n=210) reported having witnessed biased or discriminatory behaviour
- **29.4%** (n=124) **were uncertain** whether the situations they observed was discrimination.
- **20%** did not observe such behaviour, most of which were **1st or 2nd semester** students.
- Analysis (n=182) showed, that **deliberately withholding care** or **treatment** (n=58) followed by **verbal abuse** (n=57) and **ignoring patients** or refraining from acting (n=14). More severe cases included **physical abuse** (n=9).
- Most common percived reason was **foreign nationality or poor German skills**, type of diagnosis, gender and socio-economic status (Meidert et al, in preparation).

# Situation in Switzerland: sparse Research

- A study with **medical students** in Lausanne on **gender biases.** Students described various situations in the clinical encounter e.g. anamnesis, physical exam, differential diagnosis, final management (Arena et al. 2024).
- A study with 352 general practitioners in the **Canton of Zurich** showed that **migrant status** (ethnicity and migration history) and **economic position** of patients influenced physician's willingness to treat the patient. (Drewniak et al. 2016).
- A study in **Geneva** with 133 **internists** and **psychiatrists** showed that psychiatrists had significantly **less implicit** and **explicit bias** against **mentally vs. physically ill** compared to internists. **More experienced** physicians had warmer feelings towards the mentally ill and a greater level of concern than the less experienced, except when the patient was described as **obese** (FitzGerald et al. 2022).
- A study in professional **medical coding practice** showed limited bias by patient **age and gender**, though findings were inconsistent across medical conditions (Torres et al., 2019).

# How to Mitigate Unconscious Bias




**Institutional level**

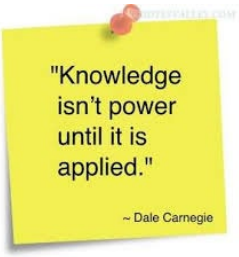
- Clear policy and established culture on equity in health care, accountability of staff
- Speak-up culture, tools and culture around “errors”, such as de-briefings or supervision
- Quality control, incl. patient surveys
- Information and sensitization: trainings and interventions that promote the knowledge on bias
- Good working conditions/resources that allow for slow/reflected decision making (reduced stress and time pressure, well rested employees)

**Group/team level**

- Use structured guidelines or check-list so that decision making is supported and structured
- Metha-cognitive interventions: reflecting on past situations, evaluating issues from both sides, looking for disconfirming evidence
- Evaluators' assessments should remain independent
- If possible: blind names, pictures etc. mention of background/ethnicity only if necessary

Source: Cioffi 2025; Marcelin et al. 2019; Nelson, 2002

# How to Mitigate Unconscious Bias




**Personal level: general**

- Be aware that everyone has unconscious biases (confirmation bias, authority bias)
- Question your own objectivity
- Make conscious decisions, "slow thinking", good conditions for decisions
- Only incorporate intuition after a general assessment
- Break down complex decisions into steps
- Give reasons for decisions or have a “devils advocate“

**Personal level: health care practice**

- Perspective taking: try to understand the patient's point of view. Think about what he/she thinks and feels
- Individuation: Trying to get to know the patient's personal story in order to build a therapeutic relationship instead of seeing him/her as a member of a group
- Replacing stereotypes: Consciously replacing negative images with positive images

# Ressources

## *Books:*

Banaji, M. R., & Greenwald, A. G. (2016). *Blindspot: Hidden biases of good people*. Bantam.

Kahneman, D. (2011). *Thinking, fast and slow*. macmillan.

Agarwal, P. (2020). *Sway: Unravelling unconscious bias*. Bloomsbury Publishing.

## *Podcasts:*

Hidden Brain "People like us" Unconscious Bias in medicine: https://hiddenbrain.org/podcast/the-people-like-us/

All in the Mind: https://www.bbc.co.uk/sounds/play/b08q60pr

## *Learning Materials*

Self study tool from the University Konstanz: https://www.uni-konstanz.de/unconscious-bias-tool/#/lessons/vfSaIr50InH-5LX9IWaBcBqVEfXPWM1y

Self study tool from Stanford School of Medicine on edx**:** https://www.edx.org/learn/medicine/stanford-university-unconscious-bias-in-medicine?index=product&queryID=0d59bfea5ea1f4b32ac682673ccbf2f3&position=1&linked_from=autocomplete&c=autocomplete

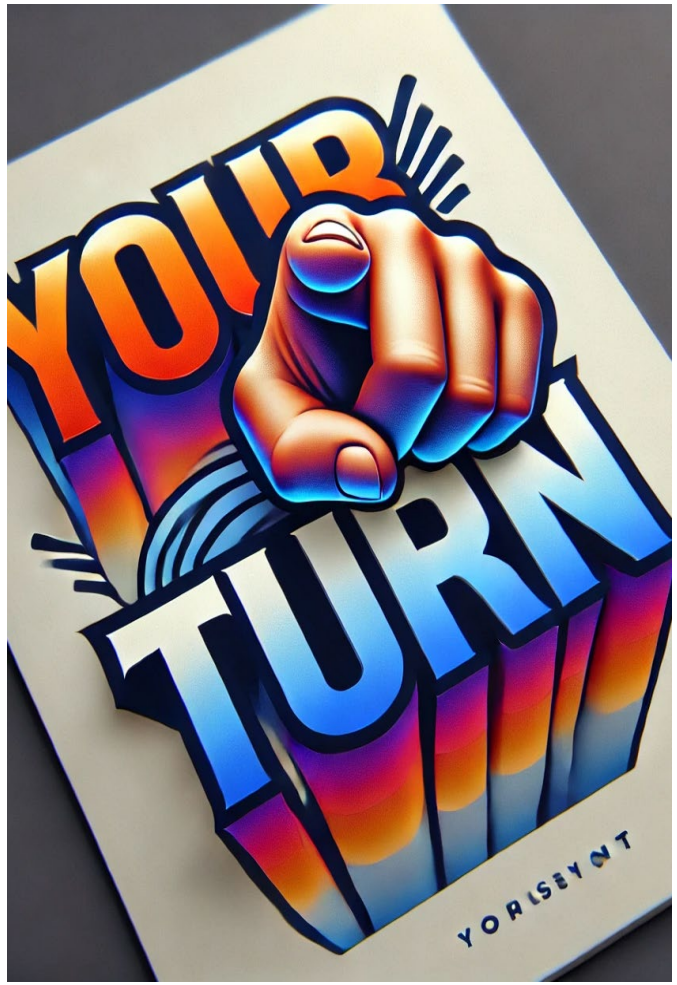
# Questions and Discussion

**Questions & questions for discussion**

**Have you encountered the unconscious bias?**

**To what extent is it relevant to your work?**

**What are good examples to mitigate unconscious bias in your practice?**




Source: ChatGPT

# Literatur


Arena, F., Geiser, E., Auer, S., Clair, C., & Schwarz, J. (2024). Reflexivity and positionality applied to medical practice: a study on implicit gender bias with medical students in a Swiss university. *International journal for equity in health*, *23*(1), 132.

Bernardes, S.F.; Lima, M.L. 2011. A Contextual Approach on Sex-Related Biases in Pain Judgements: The Moderator Effects of Evidence of Pathology and Patients' Distress Cues on Nurses' Judgements of Chronic Low-Back Pain. *Psychol. Health* 26, 1642–1658.

Brignardello-Petersen, R. (2019). There seems to be racial bias when making treatment recommendations for patients with irreversible pulpitis and borderline restorable molars. The Journal of the American Dental Association, 150(8), e117.

Cioffi, J. (2025). Action for cognitive biases in clinical decision-making. Academia Medicine, 2. https://doi.org/https://doi.org/10.20935/AcadMed7526

Cooper, L. A., Roter, D. L., Johnson, R. L., Ford, D. E., Steinwachs, D. M., & Powe, N. R. (2003). Patient centered communication, ratings of care, and concordance of patient and physician race. *Annals of Internal Medicine, 139*, 907–915. Johnson et al., 2004

Dovidio, J. F., Gaertner, S. L., Kawakami, K., & Hodson, G. (2002). Why can't we just get along? Interpersonal biases and interracial distrust. *Cultural Diversity and Ethnic Minority Psychology*, *8*, 88-102.

Drewniak, D., Krones, T., Sauer, C., & Wild, V. (2016). The influence of patients' immigration background and residence permit status on treatment decisions in health care. Results of a factorial survey among general practitioners in Switzerland. *Social Science & Medicine*, *161*, 64-73.

Drwecki, B. B., Moore, C. F., Ward, S. E., & Prkachin, K. M. (2011). Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. Pain, 152(5), 1001-1006.

Gräf, M., & Unkelbach, C. (2018). Halo effects from agency behaviors and communion behaviors depend on social context: Why technicians benefit more from showing tidiness than nurses do. *European Journal of Social Psychology*, *48*(5), 701-717.

FitzGerald, C., & Hurst, S. (2017). Implicit bias in healthcare professionals: a systematic review. *BMC medical ethics*, *18*, 1-18.

FitzGerald, C., Mumenthaler, C., Berner, D., Schindler, M., Brosch, T., & Hurst, S. (2022). How is physicians' implicit prejudice against the obese and mentally ill moderated by specialty and experience?. *BMC medical ethics*, *23*(1), 86.

Hart, W., Albarracín, D., Ealgy, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin, 135*, 555–588. doi:10.1037/a0015701.

# Literatur


Lepièce, B.; Reynaert, C.; van Meerbeeck, P.; Lorant, V. 2014. General Practice and Ethnicity: An Experimental Study of Doctoring. *BMC Fam. Pract.*, 15, 89.

Marcelin, J. R., Siraj, D. S., Victor, R., Kotadia, S., & Maldonado, Y. A. (2019). The impact of unconscious bias in healthcare: how to recognize and mitigate it. *The Journal of infectious diseases*, *220*(Supplement_2), S. 62-S73.

Meidert, U., Dönnges, G., Bucher, T., Wieber, F., & Gerber-Grote, A. (2023). Unconscious Bias among Health Professionals: A Scoping Review. *International Journal of Environmental Research and Public Health*, *20*(16), 6569.

Meidert, U. Höglinger, M., Wieber F. & Gerber-Grote, A. (submitted). Unconscious bias among students of health professions – an experimental vignette study. BMC Medical Education.

Meidert, U., Candolfi, L., Gazzotto, A., Wieber, F. & Gerber-Grote, A. (in preparation). Discrimination in Healthcare trough the Eyes of Future Professionals: A Qualitative Study of Student Observations. BMC International Journal for Equity in Health

Nelson, A. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. *Journal of the national medical association*, *94*(8), 666.

Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of personality and social psychology*, *35*(4), 250.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of general psychology*, *2*(2), 175-220.

Nymo, L.S.; Aabakken, L.; Lassen, K. 2018. Priority and Prejudice: Does Low Socioeconomic Status Bias Waiting Time for Endoscopy? A Blinded, Randomized Survey. *Scand. J. Gastroenterol*. 53, 621–625.

Penner, L. A., Dovidio, J. F., Gonzalez, R., Albrecht, T. L., Chapman, R., Foster, T., ... & Eggly, S. (2016). The effects of oncologist implicit racial bias in racially discordant oncology interactions. *Journal of clinical oncology*, *34*(24), 2874-2880.

Ross, L., Greene, D., & House, P. (1977). The “false consensus effect”: An egocentric bias in social perception and attribution processes. *Journal of experimental social psychology*, *13*(3), 279-301.

Serenko, A., & Bontis, N. (2011). What's familiar is excellent: The impact of exposure effect on perceived journal quality. *Journal of Informetrics*, *5*(1), 219-223.

Torres, J. M., Hessler-Jones, D., Yarbrough, C., Tapley, A., Jimenez, R., & Gottlieb, L. M. (2019). An online experiment to assess bias in professional medical coding. *BMC medical informatics and decision making*, *19*(1), 115.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