

1 Appendix

1.1 Datenextraktionstabellen: Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitssektor (FF1)

1.1.1 Eingeschlossenen Literatur

Tabelle A1-1: Übersicht der eingeschlossenen Leitlinienpapiere (Forschungsfrage 1)

Guidance type	Authors, year [Reference]	Source	Methods	Countries	Institution	Target population	Conflict of interests
Specific with focus on weight stigma	WHO 2017 [1]	HS	NR	Europe	WHO European Region	Policy	NR
	Kirk et al. 2020 [2]	HS	NR	Canada	Canadian Adult Obesity Clinical Practice Guidelines	HCP, patients, policy	NR
	Fruh et al. 2021 [3]	SS	NR	USA	College of Nursing & Department of Health, Kinesiology, and Sport (University of Alabama)	HCP	NR
	Gallagher et al. 2021 [4]	SS	Series of roundtable meetings with representatives from 12 primary care and obesity specialty organisations to discuss the key components of obesity treatment in primary care.	USA	The guide was reviewed and endorsed by 11 of the organisations that participated in the meetings: American Academy of Physician Assistants, American Association of Clinical Endocrinologists, American Association on Nurse Practitioners, American Board of Obesity Medicine, American College of Physicians, American Medical Group Association, American Society of Metabolic and Bariatric Surgery, Endocrine Society, Obesity Action Coalition, Obesity Medicine Association, and The Obesity Society	HCP in primary care	NR
	Braddock et al. 2023 [5]	SS	NR	USA	Different universities	Paediatricians	None
	Crowley 2023 [6]	SS	NR	USA	NR	HCP	The author works for Seca Corporation, but this work has no impact on the content of this article.

	Hill et al. 2023 [7]	SS	45 min workshop: 15 min background & 30 min brainstorming Activity in 2 groups to generate actionable ideas for reducing weight stigma for preconceptive women from an individual and a societal perspective	Europe	European Conference on Preconception Health Care	HCP, preconceptive women	None
Consensus statement	Albury et al. 2020 [8]	HS	NR	UK	Collaboration with stakeholders from Obesity UK , physicians, dieticians, clinical psychologists, obesity researchers, conversation analysts, nurses, and representatives from NHS England Diabetes and Obesity	HCP	CA reports half a day's consultancy for Weight Watchers, leading to payments to their institution but not to CA personally. WDS reports grants, personal fees, and non-financial support from Bayer, Novo Nordisk, Novartis, and Takeda. WDS also reports speaker honoraria from AstraZeneca, BMS, Merck, Napp, Novo Nordisk, Novartis, and Takeda, outside of this consensus statement for his expertise regarding the engagement with individuals living with obesity. SLB is the Director of Obesity UK. AT reports personal fees from Lilly, AstraZeneca, Bristol-Myers Squibb, and Janssen; non-financial support from Merck Sharp & Dohme, Philips Respironics, Impeto medical, ANSAR, and Aptiva; personal fees and non-financial support from Boehringer Ingelheim; grants and non-financial support from Napp; grants, personal fees, and non-financial support from Sanofi and Novo Nordisk; and non-financial and equipment support from Resmed, outside of this consensus statement. JL and CL declare no competing interests.

	Rubino et al. 2020 [9]	SS	Consensus-development conferences with modified delphi process: a multi-disciplinary group of international experts, including representatives of 10 scientific organisations reviewed the available evidence	USA, UK, Italy, Ireland, Spain, Australia, Canada, Chile, Israel	Pennington Biomedical Research Centre (USA), ConscienHealth (USA), American Diabetes Association (USA), Mount Sinai Health System (USA), Obesity Action Coalition (USA), Penn State Hershey Medical Center (USA), Obesity Canada, Baker Heart and Diabetes Institute (AUS), Diabetes UK Different Universities	HCP	NR
	STRIPED 2020 [10]	HS	Delphi expert consensus method: group of panelists (or experts) from diverse sectors within public health, divided into two groups based on professional backgrounds, completed a series of surveys and rated items about weight stigma to determine which should be included in this roadmap. Participants received a summary of each group's item ratings between survey rounds. Only the items with the highest consensus were included in the roadmap.	USA	Strategic Training Initiative for the Prevention of Eating Disorders (STRIPED)	Public health professionals	NR
	Nadolsky et al. 2023 [11]	SS	Consensus conference on obesity to focus on the intersection of perception, diagnosis, stigma, and bias of obesity – development of a roadmap for HCP with actionable, pragmatic clinical proposals to combat obesity stigma and bias in clinical practice and beyond	USA	American Association of Clinical Endocrinology (AACE)	HCP	NR
Position statement	Eisenberg et al. 2019 [12]	SS	Summary of current, published, peer-reviewed	USA	American Society for Metabolic and Bariatric Surgery (ASMBS)	HCP, patients, policy	None

			scientific evidence and expert opinion				
Nutter et al. 2023 [13]	SS	Working group members included 41 representatives to discuss weight stigma on a global scale. Members included HCP, obesity researchers, weight stigma researchers, health policy-makers, youth advocates working in obesity contexts, and individuals with lived experience of obesity. Between March and November of 2021, 4 sub-groups met online approximately every 4-6 weeks.	Australia, the Bahamas, Bangladesh, Brazil, Canada, the Caribbean, Chile, France, India, Ireland, Kenya, Kuwait, Malaysia, Mexico, New Zealand, Nigeria, Singapore, Sweden, UK, US	World Obesity Federation	HCP	M.C. currently works with WW International.	

Abkürzungen: HCP – Healthcare professionals, HS – Handsuche, NR – Not reported, SS – Systematische Suche, UK – United Kingdom, USA – United States of America

Tabelle A1-2: Übersicht der eingeschlossenen Reviews

Review type	Authors, year [Reference]	Source	Countries	Methods		Literature		Conflic of interest
			Authors allocated in	Guidance	Search strategy	Publication types (n)	Target population (n)	
Systematic review	Alberga et al. 2016 [14]	SS	Canada	Cochrane Handbook for SR of Interventions; PRISMA statement	9 databases (MEDLINE, EMBASE, CINAHL, PsycINFO, SocINDEX, Social Work Abstracts, ERIC, Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials) limited to English or	Original primary empirical research with focus on weight bias (n=17): - RCT (n=5) - NRCT (n=4) - Pre-post design (n=8)	HCP (e.g., nurses, patient care technicians, unit secretaries, kinesiology professionals) and students from medicine, psychology, dietetic, physical education Sample size, range: 27-266	None

					French and from 1990 - September 2015			
Scoping reviews	Nagpal et al. 2020 [15]	SS	Canada	Arksey and O'Malley's framework, Tricco et al., PRISMA-ScR checklist	4 databases: Medline, EMBASE, PsycInfo, and CINAHL - no restrictions & grey literature from OpenGrey and Proquest	Studies about weight stigma causes & recommendations for clinical practice (n=18): - Qualitative (n=17): interviews with pregnant women (n=14), interviews with HCP (n=5) - Mixed-methods (n=1)	Prenatal HCP, pregnant women with a BMI $\geq 30.0 \text{ kg/m}^2$ Sample size: NR	None
	Malik et al. 2023 [16]	SS	Australia	PRISMA statement	4 databases: Medline, Scopus, PsychInfo & Cinahl limited from 1990 - 2022	Papers with focus on weight stigma in the dental setting: - SR (n=1, with 8 cross-sectional studies) - RCT (n=1) - Qualitative studies (n=6) - Surveys (n=15) - Editorials (n=2)	Dentists Sample size, range: 20 (qualitative study) - 13357 (survey)	None
Qualitative review	Ryan et al. 2023 [17]	SS	Ireland	ENTREQ checklist, PRISMA guidelines	5 databases: PubMed, MEDLINE, PsycInfo, CINAHL, Embase, and Scopus from May 2011 onwards	Studies that collected & reported primary qualitative or mixed-method data exploring the perceptions and experiences of enacted weight stigma across primary, secondary, and tertiary healthcare settings from the perspective of the	HCP: - Primary care (n=10) - Secondary care (n=14) - Tertiary care (n=10) Sample size, range: 8-501	LR, RC, CH, JW, OC, and RD: None. M.C. reports honoraria for educational events or conference attendance from Novo Nordisk and Consilient Health and is a member of a Novo Nordisk advisory board and the Irish ONCP Clinical Advisory Group and ASOI. He is the co-founder and clinical lead of "My Best Weight Clinic." S.B. reports funding to ICPO from the HSE, Novo Nordisk, and the European Coalition for People Living with Obesity (ECPO) and consulting fees or honoraria from Diabetes Ireland, ECPO, and

						patient living with obesity (BMI > 30 kg/m ²) (n=32)		Novo Nordisk. She is the Executive Director of ICPO and the Secretary of ECPO.
Not defined	Tylka et al. 2014 [18]	SS	USA, Iceland, UK	NR	NR	NR	HCP, patients, policy Sample size: not applicable	None
	Sharma et al. 2018 [19]	SS	Canada	NR	Studies selected by a working group of the Canadian Obesity Prevention and Management experts of the Canadian Obesity Network-Réseau canadien en obésité (CON-RCO)	NR	HCP, educational sector, policy Sample size: not applicable	A.M. Sharma has received compensation from Novo Nordisk and Valeant for service on advisory boards, and has received compensation from Novo Nordisk and Merck for service on speakers' bureaus, as well as travel reimbursement from both. X.R. Salas: None
	Sackett et al. 2019 [20]	SS	USA	NR	NR	NR	HCP (e.g., physicians, osteopahty) Sample size: NR	None
	Puhl and Lessard 2020 [21]	SS	USA	NR	NR	NR	Pediatrics, youth patients Sample size: NR	NR
	Mauldin et al. 2022 [22]	SS	USA	NR	NR	Weight science literature	Clinicians Sample size: NR	None
	Puhl 2023 [23]	SS	USA	NR	NR	NR	HCP, students & general health care system Sample size: NR	R.M. Puhl has received research grants from WW and served as a consultant for Eli Lilly and Company, outside of the submitted work
	Westbury et al. 2023 [24]	HS	Australia, UK	NR	NR	NR	Edcuational sector, policy Sample size: not applicable	None
	Darling et al. 2024 [25]	SS	UK, Israel	NR	NR	NR	Paediatricians Sample size: NR	FR reports receiving investigator-initiated research grants from Ethicon (Johnson & Johnson), Novo Nordisk and Medtronic; receiving consulting fees from GI Dynamics; receiving speaking honoraria from Medtronic, Ethicon and Novo Nordisk; and serving (unpaid) as a member of the scientific advisory board for Keyron and member of DSMB for GI Metabolic Solution

	Olson et al. 2024 [26]	SS	USA	NR	NR	NR	Clinicians and midwives Sample size: NR	None
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Abkürzungen: HCP – Healthcare professionals, HS – Handsuche, NR – Not reported, SS – Systematische Suche, UK – United Kingdom, USA – United States of America

1.1.2 Strategien adressiert an das Gesundheitspersonal und Student*innen im Gesundheitsbereich

Tabelle A1-3: Strategien zur Reduktion von Gewichtsstigmatisierung für Gesundheitspersonal und Student*innen im Gesundheitsbereich (Leitlinien)

Guidance type	Specific guidance with focus on weight stigma						
Authors, year [References]	WHO 2017 [1]	Kirk et al. 2020 [2]	Fruh et al. 2021 [3]	Gallagher et al. 2021 [4]	Braddock et al. 2023 [5]	Crowley 2023 [6]	Hill et al. 2023 [7]
Target population	Public health	HCP, patients, public health	HCP	HCP in primary care	Paediatricians	HCP	HCP
Acknowledgement Weight bias assessment: <i>With acknowledgement comes awareness that can inform thoughts and behaviours to reduce bias.</i>	NR	HCP should assess their own attitudes and beliefs regarding obesity and consider how their attitudes and beliefs may influence care delivery (Level 1a; Grade A). HCP should avoid making assumptions that an ailment or complaint a patient presents with is related to their body weight (Level 3, Grade C). HCP should recognise that IWB in people living with obesity can affect behavioural and health outcomes (Level 2a; Grade B) – using sensitive questioning/dialogue/motivational interviewing (e.g., “Can you share with me if or how your weight affects	The Obesity Society has helpful questions to identify bias. The Rudd Center has an 8-module tool kit self-assessment course to help prevent obesity bias in providers.	NR	The Implicit Association Test (IAT) is a validated tool to assess weight bias (and other biases) by measuring the strength of associations between concepts and stereotypes. Utilise <u>patient surveys and patient experience boards</u> to allow patients and families to share experiences of weight bias. Try to obtain feedback through patient questionnaires of their reason for not attending clinic visits.	Increase awareness of own personal assumptions, attitudes or beliefs about weight and health (e.g., through didactic learning or by taking individual IAT).	NR

		<i>your perception of yourself?”). Coping strategies to address IWB should be incorporated into behavioural interventions, consistent with the principles of cognitive behavioural therapy and acceptance and commitment therapy.</i>					
Education and training	NR	Present facts about uncontrollable and non-modifiable causes of obesity (i.e., genetics, biology, environment, socio-cultural influences and social determinants of health). Before HCP start their professional training, there is a <u>need for systematic education on weight bias and stigma</u> in all HCP training programmes. All professional health disciplines should therefore include <u>weight bias sensitivity training in their curricula</u> .	Advancing knowledge: HCP who have greater knowledge in obesity management offer more comprehensive care and treat patients confidently. When individuals are provided with information regarding <u>obesity as a complex disease</u> with multiple causes (genetic, biological, and no controllable aspects), their negative attitudes decreased. Taking online educational programmes: When HCP and students complete online educational materials, it can help reduce obesity bias.	NR	Academic institutions, professional bodies, and regulatory agencies must ensure - teaching on the causes, mechanisms, and treatments of obesity are incorporated into <u>standard curricula for medical trainees, and other HCP</u> . OMA, TOS, and other ABOM-approved organizations all offer <u>Continuing Medical Education (CME)</u> for interested clinicians looking for in-depth, evidence-based educational content to better inform the care of <u>children and adolescents with obesity</u> . Trainings need to help HCP to <u>reframe obesity as a chronic disease</u> and not a personal weakness or lifestyle choice, and to	Increase education of <u>obesity as a disease</u> and understand complex etiology of obesity: challenge the conventional views about the cause of obesity. <u>Mandatory curriculum</u> to train HCP. Integrate <u>sensitive communication training</u> during tertiary education. Creating <u>interactive education materials</u> in collaboration with people who have had the lived experience of obesity.	NR

					<p>understand the biochemical complexity that contributes to obesity and hinders weight loss.</p> <p>Cultural competency training can help HCP understand the interplay between their culture, personal beliefs and experiences with the responses and experiences of their patients and to inform communication and behaviours that may affect therapeutic disease management.</p> <p>Professional bodies should encourage, facilitate, and <u>develop methods to certify knowledge of stigma</u>.</p> <p>The American Board of Obesity Medicine (ABOM) offers <u>physicians certification (ABOM diplomate)</u>, signifying specialised knowledge in the practice of obesity medicine and achieving competency in obesity care. The Obesity Medicine Association (OMA) offers Nurse Practitioners (NP) and Physician Assistants (PA) the <u>Certificate of Advanced Practice to</u></p>	
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					demonstrate extensive knowledge of evidence-based obesity medicine treatment approaches.		
Communication and language	NR	HCP should <u>avoid using judgmental words</u> (Level 1a, Grade A), <u>images</u> (Level 2b, Grade B) and <u>practices</u> (Level 2a, Grade B) when working with patients living with obesity. Provide positive contact with patients living with obesity to evoke <u>empathy</u> (i.e., include the patient voice).	Motivational interviewing Demonstrating respect and compassion <u>People-first language</u> Understanding the patient's point of view: <i>"What words would you like me to use when we talk about weight?"</i> <i>"How do you feel about your weight?"</i> <i>"Can we talk about your weight today? or Do I have permission to discuss your weight?"</i>	Use of appropriate language, sensitivity to the patient's previous experience with HCP, active listening, and a non-judgmental approach. Patients may find the term "unhealthy weight" more motivating than the term "obesity," which many consider stigmatising. HCP need to explain that the term "obesity" is a medical diagnosis and not a negative comment about the patient's weight. <u>People-first language:</u> The term "patient with obesity" is more appropriate than the phrase "obese patient".	<u>Person-first language</u> (writing, communication, research, etc.): "Person with obesity" is the preferred terminology. Asking permission to talk about weight. Terms like "obese" or "fat" are particularly stigmatising: ask patients about their preferred terms. Children and adolescents dislike terms like "morbidly or extremely obese", "fat", or "large" - variability in preferred terms and emotional response depending on sex, sexual orientation, racial/ethnic background. Identify negative speech during patient interviews and use it as a teaching moment for family and patient to change: <i>"When we talk about weight, what words would you like us to use? What words do you want us to avoid?"</i>	Use of <u>patient-centered care</u> is critical to facilitate conversations regarding weight management. HCP can use <u>shared decision-making</u> to build trust and guide treatment options. <u>People-first language</u> Consider using neutral terminology: acknowledge different preferences regarding terms. Most stigmatising words: <i>fat, morbidly obese, obese, heavy, chubby, extremely obese</i> ; less stigmatising words: <i>weight, BMI (if explained properly), weight problem, unhealthy weight, overweight</i> . Using an approach based in genuine curiosity, consider asking the patient: <i>"Is there a future time that might be appropriate for us to discuss how your weight and health may be affecting each other and how we might</i>	Upskill: professional development opportunities/training clinicians to understand the power of their words and be mindful of patient needs and feelings. Acknowledge that communicating relative risks may exaggerate the potential for adverse outcomes compared to absolute risk.

					Use reflective listening and summarisation to validate the patient's concerns and determine next steps.	<i>work together to address it?"</i>	
Others	NR	Include empathic obesity experts as <u>peer-modelling</u> HCP.	Children/adolescents: When assessing children or adolescents, completing a screening measure related to any form of bullying, teasing, or victimisation is an important first step to understand what the child may be experiencing. HCP should understand the <u>home environment</u> of the patient through communication with parents/caregivers. Parents/caregivers should not use weight-based teasing or shaming with children – HCP can offer parents education and resources necessary to create a healthy home environment.	NR	Youth: Do not assume schools will be able to successfully address weight-based bullying on their own. Screen for mood disturbance and make referrals to community mental health resources. Enlist board-certified <u>obesity medicine specialists for referral</u> who enhance their knowledge and skills in managing obesity. In addition, these professionals can also be <u>strong advocates</u> for this population. <u>Modeling behaviour</u> as a trusted clinician, educator and colleague makes a strong statement and encourages others to do the same. Develop a strategy to <u>address the intersectionality of multiple biases</u> propagated by society, such as gender diverse youth with obesity.	<u>Weight-neutral approach:</u> Move focus away from body weight and turn to the health conditions for which obesity is a risk factor and can be targeted (focus on genetic, metabolic and environmental causes).	<u>Weight-neutral approach:</u> Reframe the healthcare focus on weight to avoid a “blame narrative” - focus on general health and well-being. <u>Co-develop services with people who have lived experience of being in a larger body.</u>

Practical tools	NR	NR	NR	<p>The “5As”¹ counseling framework for HCP: Ask: for permission to talk about weight, actively listen to and acknowledge patient concerns, including the diagnosis of obesity and the terms the patient would prefer using to discuss their weight. Advise: shared decision-making to establish next steps. If the patient is not interested in discussing weight - express a willingness to work together on the issue in a future office visit. Agree: patient’s agreement to discuss obesity. Arrange: coordination of follow-up following patient-centered care.</p> <p>The Weight Can’t Wait Guide for the Management of Obesity in the Primary Care Setting</p>	<p>The trauma informed care (TIC) framework of realise, recognise, respond, and resist (re-traumatisation) is particularly relevant to obesity care to assess weight stigma and bullying. Recognise and identify trauma by screening for adverse childhood experiences, weight-based victimisation, mood disturbance - respond with support of policies, practices and clinical workflows that support all patients, including taking universal precautions that all patients have experienced or are experiencing some type of trauma - resist re-traumatising by reviewing the medical record, communicating with staff and coordinating care, and avoiding stigmatising language.</p>	<p>Modified “5 As”¹ model for weight management counseling in primary care: Ask: permission to discuss weight and health. Advise: on health risks, benefits, options and consider shared decision-making. Agree: regarding treatment goals and plans by considering patients wishes. Arrange: for follow-up. Do not stop with your advocate for patient-centered care, appropriate language, and access to care for people with obesity at all levels.</p>	<p>Remember the “5 As tool”¹ (Ask, Advise, Assess, Assist, and Arrange) to prioritise patient needs.</p>
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Abkürzungen: HCP – Healthcare professionals, HS – Handsuche, IWB – Internalised weight bias, NR – Not reported, SS – Systematische Suche

¹ Not all aspects of the 5As counseling framework (**ask** for permission, **assess** weight-related comorbidities, **advise** shared decision-making, agreement of the patient, **assist** by presenting treatment options and **arrange** needed coordination) consider aspects about weight stigma. Thus, only the topic-relevant As were reported here.

Tabelle A1-4: Strategien zur Reduktion von Gewichtsstigmatisierung für Gesundheitspersonal und Student*innen im Gesundheitsbereich (Konsenspapiere und Positionspapiere)

Guidance type	Consensus statement				Position statement	
Authors, year [Reference]	Albury et al. 2020 [8]	Rubino et al. 2020 [9]	STRIPED 2020 [10]	Nadolsky et al. 2023 [11]	Eisenberg et al. 2019 [12]	Nutter et al. 2023 [13]
Target population	HCP	HCP	Public health professionals	HCP	HCP, patients, policy	HCP
Acknowledgement: Weight bias assessment	NR	NR	NR	Patients with adiposity-based chronic disease (ABCD) should be screened for IWB : the <u>Weight Self-Stigma Questionnaire</u> and the <u>Weight Bias Internalization Scale</u> are validated tools that can be used.	NR	NR
Education and training	NR	Academic institutions, professional bodies, and regulatory agencies must ensure that <u>formal teaching on the causes, mechanisms, and treatments of obesity are incorporated into standard curricula</u> for medical trainees, and other HCPs. (U) Professional bodies should encourage, facilitate, and develop methods to <u>certify knowledge of stigma</u> and its effects, along with stigmafree skills and practices. (A) <u>Encourage and support educational initiatives</u> aimed at eradicating weight bias through dissemination of current knowledge of	NR	HCP and organisations should implement policies and actions to reduce the impact of weight bias in patient care including, but not limited to, <u>implicit bias training</u> for staff, <u>obesity education</u> of HCP to reduce explicit bias.	<u>Education on obesity as a chronic disease</u> : Obesity medicine should be part of <u>medical training</u> and should focus on increasing knowledge, competency, <u>sensitive communication</u> , and confidence in treating patients with obesity. <u>Sensitivity training</u> to increase awareness for and reduce the impact of weight bias: there is a broad need for recognition of weight bias, the challenge of living with obesity, and the difficulty of weight loss. In addition, the emotional and health consequences of being stigmatised must be recognised and appreciated.	<u>Knowledge of weight stigma in professional training programmes</u> as well as <u>continuing education opportunities</u> is especially important in education, healthcare, and workplace contexts to improve equity for children, adolescents, and adults.

		obesity and body-weight regulation.				
Communication and language	<p><u>Seeking permission</u>: permission to discuss the individual's weight should be sought by use of an open-ended question - opportunity to say that they do not wish to talk about their weight at this time; it is important to first address the individual's presenting concern.</p> <p><u>Person-centred language</u>: An individual should not be defined by their condition: "person living with obesity" should be used.</p> <p><u>Use of language that is free from judgment or negative connotation</u>: Even though an accepted medical definition, obese should not be an acceptable adjective to use in a conversation not solely during a consultation, but in the way that HCP communicate professionally to each other.</p> <p><u>Be aware of non-verbal communication</u>: Ensure that body language engaging in a way that would be deemed appropriate for any other medical condition.</p> <p><u>Be understanding</u>: It should be remembered that the person living with obesity has a dual role as not only a patient, but also a person who should implement structured changes to their lifestyle.</p> <p><u>Avoiding blame, but not generalising</u>: Language that attributes responsibility (or blame) to a person for the development of their obesity should be avoided. However, language that implies generalisations, stereotypes, or prejudice should also be avoided:</p>	Not using stereotypical language, images, and narratives that unfairly and inaccurately depict individuals with overweight and obesity as lazy, gluttonous, and lacking willpower or self-discipline.	NR	HCP and organisations should implement policies and actions to reduce the impact of weight bias in patient care including, but not limited to, use of <u>person-first policies and language</u> in treatment plans and health records.	NR	<p><u>Person-first language</u>: linguistic prescription which puts a person before their diagnosis or stigmatised identity, describing what a person "has" rather than asserting what a person "is." It should be understood that person-first language, as rooted in English, may differ in other languages and contexts, and its applicability in other languages ought to be explored and documented.</p> <p><u>Individual language preferences</u>: Language is dynamic, and there is no universally preferred terminology to refer to weight. Individuals with higher body weights have their own beliefs regarding weight-based terms and may have personal preferences in the use of language (e.g., fat, bigger body, and higher weight). Requesting and respecting individual preferences is critical to delivering people- and patient-centered care.</p>

	<p>“people like you struggle with exercise” imparts a generalisation on the <i>individual you are with</i>; whereas, “<i>some people with obesity can find it difficult to exercise</i>” allows the individual to think whether they fit into that mode.</p> <p><u>Avoiding combat and humour:</u> Avoiding use of combative language and humour. For patients who experience many years of demeaning humour, even well intentioned attempts can be regarded as a presentation of subconscious bias. Continuing to avoid this humour outside of the consultation.</p> <p><u>Sticking to the evidence:</u> Communicating accurate and evidence-based information.</p> <p><u>No assumptions:</u> Assumptions about diet and physical activity should not be made. It should not be assumed that a person is inactive until they are asked about what they do.</p>					
<p>Others</p>	<p><u>Weight-neutral approach:</u> Percentage change in weight or even weight neutrality should not be used as a goal, but rather a step towards reaching a meaningful person-centred outcome.</p> <p><u>Role modelling:</u> The position of the HCP in society can serve to normalise this behaviour if they are seen to participate, but can also send a very clear message that it is unacceptable if objections are clearly voiced.</p>	<p>NR</p>	<p>NR</p>	<p>NR</p>	<p>NR</p>	<p><u>Weight-neutral approach:</u> Person-centered conversations around health and the promotion of healthier behaviours when indicated, without an emphasis on patient weight, may allow for positive outcomes by HCP without unintentional reinforcement of weight stigma.</p> <p>Distinguish between body size and obesity: use an accurate definition of obesity that moves beyond a solely BMI-based measurement. Although BMI may be used as a population</p>

						measure and a clinical screening tool, it should not be used as a medical diagnostic tool.
Practical tools	NR	NR	NR	NR	NR	NR

Abkürzungen: HCP – Healthcare professionals, HS – Handsuche, IWB – Internalised weight bias, NR – Not reported, SS – Systematische Suche

Tabelle A1-5: Strategien zur Reduktion von Gewichtsstigmatisierung für Gesundheitspersonal und Student*innen im Gesundheitsbereich (Reviews)

Review type	Systematic review	Scoping review		Qualitative review	Not defined	
Authors, year [Reference]	Alberga et al. 2016 [14]	Nagpal et al. 2020 [15]	Malik et al. 2023 [16]	Ryan et al. 2023 [27]	Tylka et al. 2014 [18]	Sharma et al. 2018 [19]
Target population	HCP	Prenatal HCP and pregnant women with a BMI ≥ 30.0 kg/m ²	Dentists	HCP	HCP, patients, policy	HCP, educational sector, policy
Acknowledgement: Weight bias assessment	Self-awareness through self-reflection and gaining an understanding of ones' own attitudes and biases.	NR	Self-awareness: Dentists should assess their own attitudes and beliefs regarding people with obesity and how this be influencing their dental service provision (implicit weight bias).	NR	Challenge HCP to examine their own biases around weight and adopting effective and ensitive strategies to communicate with all patients along the weight continuum.	NR
Education and training	Intellectual understanding of weight, overweight, obesity and weight-related bias, stigma and discrimination by providing basic information for HCP. Pre-professional education: HCP curriculum revisions are warranted: <u>Single component approach</u> (e.g. receiving a single lecture, attending multiple lectures within a course on the uncontrollable causes of obesity, completing a selflearning module, providing an article on the uncontrollable causes of	Providing HCP with <u>educational resources</u> that can help with patient-provider communication, including additional information related to obesity during pregnancy. <u>Sensitivity training opportunities and tools</u> should made available to HCP to increase their confidence in discussing obesity and weight during prenatal care appointments, e.g., conversation guides that may support HCP with discussing weight and obesity during pregnancy.	Incorporating obesity into the <u>curricula of dental schools</u> .	Need for HCP to be knowledgeable with contemporary obesity medicine and best practice guidelines that do <u>not over simplify the complexity of obesity</u> .	<u>Medical education</u> on "best practices" for providing healthcare to higher-weight people. Conduct <u>trainings</u> to inform HCP about the <u>weight-inclusive approach</u> .	Obesity should be recognised and treated as a <u>chronic disease</u> in health care and policy sectors - eveloping a better clinical definition for obesity and provide coverage for evidence-based obesity treatments for their employees through health benefit plans. In the education sector , weight and health need to be decoupled. Incorporate weight bias and stigma awareness in all CON-

	<p>obesity, receiving feedback about their level of stigma [cognitive dissonance vs social consensus], training in bariatric sensitivity, and viewing videos about weight bias) <u>vs multi-component strategies</u> (e.g. education plus realworld experience in working with a patient with obesity, education plus another form of selfreflection) - any approach must be multi-faceted and multi-level in order to address the many mechanisms that can lead to harm.</p> <p>Promoting positive attitudes, beliefs, skills and competencies regarding obesity during student training.</p>					<p>RCO research, education and policy programmes: <u>weight bias sensitivity training</u> incorporated in training programmes for HCP.</p>
<p>Communication and language</p>	<p><u>Empathy</u> with the lived experience of people who are classified as obese by targeting peoples' emotions.</p>	<p><u>Patient-centred approach:</u> lifestyle behaviours should be assessed at the individual-level. Exchange between patient and provider to effectively discuss health-related goals and select options that would best meet the patient's needs together. Rather than assuming one's health behaviours (e.g., presuming they are not eating healthy), HCP should consider taking the time to discuss individual behaviours, potential barriers, address questions and advise</p>	<p>Use appropriate terminology including <u>people-first language</u> when discussin people living with obesity among colleagues, in the community and in written work and research.</p> <p><u>Empathy:</u> be receptive to people living with obesity speaking about their experiences of weight bias.</p>	<p><u>Person-centered approach, including person-first language.</u> e.g. using the 5A's framework to guide the collaborative exploration of informed and individualised treatment options for patients with obesity.</p> <p><u>Verbal</u> (language) and <u>non-verbal</u> (e.g., unwillingness to touch patients) <u>communication</u> of stigma perceived by patients with obesity within patient-provider interactions: demonstrate empathy, non-judgmental</p>	<p>Base practice on the lived exeriences of patients: listen and learn, defend the therapeutic relationship.</p>	<p>NR</p>

		<p>accordingly, e.g., allowing for open-communication. Explain the decision and reasoning for referrals, e.g., why they may be referred to specialised care.</p> <p>When communicating about risks associated with obesity, the conversation should not be presented as assuming the risk will certainly occur, but instead HCP should try and explain why obesity may increase the risk for complications and be open to answering patient questions, including providing advice to reduce the risk or referral options.</p>		<p>approach to healthcare concerns, actively listen to the patient, use respectful language, build rapport, and facilitate a collaborative approach to addressing health concerns that are grounded in the individual needs of the patient.</p>		
Others	<p>Sharing positive experiences and hearing from role models who treat patients with obesity with respect and dignity could be influential for medical students in training.</p>	NR	<p>Action: support cessation of weight stigma and bias at an individual and professional level including collectively by the entire dental profession at an international level.</p>	NR	<p><u>Weight-neutral approach:</u> Respond to requests for weight loss advice with a holistic approach via encompassing and encouraging emotional, physical, nutritional, social, and spiritual health, rather than weight-focus. End BMI-based treatment decisions. Assist patients in developing long-term health practices rather than pursuing weight loss. HCP need to work to <u>reduce cultural and interpersonal weight stigma</u> within healthcare and patients' environment.</p>	NR
Practical tools	NR	NR	NR	NR	<p>The HAES model applied in healthcare: provide</p>	<p>Develop the 5As of Obesity Management</p>

						health interventions that give benefit to people at any size, without discrimination or bias.	framework to support primary care practitioners in their interactions with patients with obesity.
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Abkürzungen: HAES – Health At Every Size, HCP – Healthcare professionals, HS – Handsuche, IWB – Internalised weight bias, NR – Not reported, SS – Systematische Suche

Tabelle A1-6: Strategien zur Reduktion von Gewichtsstigmatisierung für Gesundheitspersonal und Student*innen im Gesundheitsbereich (Reviews continued)

Review type	Not defined						
Authors, year [Reference]	Sackett et al. 2019 [20]	Puhl and Lessard 2020 [21]	Mauldin et al. 2022 [22]	Puhl 2023 [23]	Westbury et al. [24]	Darling et al. 2024 [25]	Olson et al. 2024 [26]
Target population	HCP (e.g., physicians, osteopahty)	Pediatrics and youth patients	Clinicians	HCP, students and general health care system	Educational sector, policy	Paediatricians	Clinicians and midwives
Acknowledgement: Weight bias assessment	Assess and address self-stigmatisation like WBI : Physicians should be aware of biases and overcome preconceptions, effectively build rapport, and avoid having patients paradoxically terminate the provider relationship.	Acknowledgement that weight stigma is present in the healthcare environment and that pediatricians themselves are not immune to these biases.	Examine explicit beliefs and stereotypes about weight. Examine implicit associations. Check and change common assumption, e.g. higher weight patients are unhealthy not practicing healthy behaviours, higher weight patients' symptoms are due to their weight, higher weight patients' symptoms would improve with weight loss, higher weight patients want to lose weight, only higher or lower weight patients have eating disorders.	NR	NR	NR	Weight bias self-evaluation: Before initiating conversations with patients regarding their weight, midwives and HCP must first acknowledge and explore their own potential biases.
Education and training	NR	Advocate for training and education about weight stigma. Implementation of <u>educational initiatives</u>	Learn about the complex genetic, environmental, biological, psychological, and	Inclusion of weight stigma in <u>medical school curricula</u> and <u>continuing medical education</u> .	Educational interventions that provide information on the genetic and	Awareness of obesity stigma and its impact should be included within <u>educational provision across health services</u> ,	NR

		to help reduce weight stigma among pediatric physicians and residents.	social contributors to weight.	Implementation of standards to ensure comprehensive teaching on obesity and nutrition in medical school. Examples: educational reading materials, lectures, and films about weight bias and the complex etiology of obesity to self-reflection activities and interactions with patients with obesity. Training to increase providers' self-awareness of personal biases about body weight and empathy (<u>sensitivity training</u>). Development of <u>methods for certifying knowledge of weight stigma</u> and stigma-free skills and practices.	environmental causes of obesity have shown some success in changing attitudes about how much control individuals have over their own body weight - the greatest efficacy on tackling obesity stigma is achieved when <u>multiple and diverse educational strategies</u> are combined.	from ward rounds, through post-clinic discussion, to seminars and lectures. This includes firmly challenging stigma wherever we find it and promoting a wider understanding of the complex factors that underpin obesity.	
Communication and language	<u>Avoid blame, shame, or guilt</u> by acknowledging the difficulty of lifestyle changes and by not perpetuating the incorrect stereotype that obesity results from a lack of personal willpower. Use <u>sensitivity</u> in word choices: open a discussion on weight management with	<u>Patient-centered approaches</u> to childhood obesity, to use respectful language and empathic counseling strategies in the care of childhood obesity. Fundamental to these efforts is the use of supportive, compassionate, and non-stigmatising communication with	<u>Patient-centered communication</u> such as <u>motivational interviewing</u> . Implement a zero-tolerance practice policy for comments or humor that stereotypes or degrades anyone based on a physical identity or attribute. Be aware of <u>stigmatising language</u>	Training to improve supportive, respectful, and <u>patient-centered communication</u> (e.g., <u>motivational interviewing</u>) about weight-related health. Ask patients for their <u>preferred term(s)</u> to describe their weight and use their	NR	<u>Patient-centred communication</u> : empathy; adequately addressing the primary presenting problem (if not weight). <u>Sensitive and informed approach</u> : Set conversations about weight within a positive consultation context, building rapport, relationship and trust. Use a <u>motivational interviewing approach</u> .	Lack of awareness among HCP as to how to communicate with patients in larger bodies must be addressed; essential to differentiate between weight and health. During clinical visits, an essential first step is to <u>ask permission</u> before discussing nutrition, exercise,

	<p><i>“How do you feel about your weight?”</i> By using a <u>kind word choice or tone</u>, physicians may make a patient more open to discussing weight-related issues. <u>Preference</u> for the terms <i>weight, BMI, weight problem, excess weight, unhealthy body weight, and unhealthy BMI</i> and a <u>distaste</u> for the terms <i>obesity, heaviness, large size, excess fat, and fatness</i>. <u>Motivational interviewing</u> uses guided questions that allow patients to verbalise their preferences for change. Because these communication strategies are <u>patient-centered</u>, patients seem more comfortable and less threatened by them.</p>	<p>youth and their families. Adolescents with obesity have <u>different preferences for language</u> varied by gender, BMI, IWB, and emotional responses.</p>	<p>(i.e. “morbid obesity”). When a descriptor is necessary, use terms like “higher weight.” <u>Work to eliminate microaggressions</u>: intentional or unintentional verbal, behavioural, or environmental indignities that communicate hostility or negativity toward people who hold less power in society. Train your staff not to comment on the patient's weight (even in a complimentary manner). Ask permission before discussing weight with the patient (be aware that for people with a history of an eating disorder, being weighed and/or discussing weight can be triggering).</p>	<p>preferred terms in communication.</p>		<p><u>Avoid judgement and blame</u>: Such an attitude is soon detected by children, young people and their parents, and is counterproductive. Take care with <u>language</u>: Words like ‘obesity’ and ‘fat’ are often difficult for children and their parents. Phrases like ‘unhealthy weight’ or ‘too much weight for height’ may lead to a more productive conversation. Use of <u>person-first language</u> and ‘living with’ can be helpful, for example, ‘the child living with an unhealthy weight’ rather than the ‘obese child’. Take the time to explain as simply as you can that body weight is regulated by powerful biological mechanisms, and that the causes of obesity are complex and still incompletely understood. <u>Choosing the right time</u>: If just discussed other difficult health issues, the discussion about weight might be best deferred. It is most effective to engage with parents in a partnership way. This means ‘working with’ rather than ‘doing to’.</p>	<p>and the patient’s relationship with food, movement, and their body. Obtaining consent demonstrates that patient autonomy is valued and necessary for <u>person-centered care</u>. If the patient chooses to share it, understanding their journey regarding body size can help personalise the care provided. <u>Weight-inclusive language</u>: preferred - high BMI, unhealthy BMI, unhealthy high body weight, and overweight over obese, fat, and excessive fat; or fat or overweight over the word obesity.</p>
Others	<p><u>Weight-inclusive approach</u>: optimal health, vitality, wellness, and</p>	NR	<p><u>Weight-inclusive patient care practices</u> (<i>assumption that everybody is capable</i></p>	<p><u>Multi-faceted approaches</u> are needed to reduce stigma-related</p>	NR	<p><u>Role-modelling</u>: Model supportive and non-stigmatising behaviour</p>	<p><u>Weight-neutral approach</u>: Reframe thinking about bodies as to what they can</p>

	<p>prevention are more important goals than body size. Complete a <u>full diagnostic</u> workup regardless of weight: patient evaluation should include the appropriate investigation even when elevated BMI, in theory, could possibly be the cause of the signs and symptoms.</p>		<p><i>of achieving health and wellbeing independent of weight, given access to non-stigmatising healthcare; challenges the belief that a particular BMI reflects a particular set of health practices, health status, or moral character...):</i> Weigh patients less frequently; if possible, limit weigh-ins to well visit checkups and weight-related complaints; weigh privately if possible; allow patients to decline to be weighed and/or decline to be informed of their weight. Optimise psychological and physical health and well-being of people of all shapes and sizes. Be cautious about healthism: patients have the right to pursue health, but not the obligation. Don't <u>diagnose</u> your patients based on their body size: don't dismiss symptoms based on weight bias; focus on treating the condition rather than the weight; provide patient with the same</p>	<p>barriers in patient care. Practice compassionate care with patients of all body sizes, and respect patient decisions about their body weight regardless of whether or not weight loss is an intended goal. <u>Role-modeling</u> from influential peers or leaders.</p>		<p>towards children and families with obesity.</p>	<p>do and how they feel, not how they appear or what they weigh (BMI is not a 5th vital sign); recall health is not an indication of a person's value or worth. Reflect how body size may <u>intersect</u> with other identities. An anti-racist approach to patient-centered care must take weight bias into consideration and its role in reinforcing Whiteness and thinness as the norm.</p>
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			diagnosis and treatment you would provide to a thinner patient with a similar concern.				
Practical tools	NR	NR	Health At Every Size®: A paradigm that supports size-acceptance, to end weight discrimination, and to lessen the cultural obsession with weight loss and thinness and promotes balanced eating, life-enhancing physical activity, and respect for the diversity of body shapes and sizes.	NR	NR	<u>Motivational interviewing approach: ChangeTalk</u> , a free virtual role-play resource from the American Academy of Pediatrics.	Health at Every Size®: One of the most established frameworks for <u>weight-inclusive care</u> developed by the Association for Size Diversity and Health. Provision of care and clinical decision-making not influenced by a patient's weight.

Abkürzungen: BMI – body mass index, HCP – Healthcare professionals, HS – Handsuche, IWB – Internalised weight bias, NR – Not reported, SS – Systematische Suche, WBI – weight bias interanlisation

1.1.3 Strategien adressiert an Personen mit Übergewicht oder Adipositas, die Gewichtsstigmatisierung erfahren haben

Tabelle A1-7: Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich für Patient*innen mit Übergewicht oder Adipositas (Leitlinien, Konsenspapiere, Positionspapiere)

Guidance type	Authors, year [Reference]	Target population	Weight bias experience	Practical support
Specific guidance with focus on weight stigma	WHO 2017 [1]	Public health	NR	NR
	Kirk et al. 2020 [2]	HCP, patients, public health	Experiences of weight bias can harm health and wellbeing: Experiencing unequal treatment because of your size or weight, for example, is not acceptable. Talk to HCP about experiences with weight bias. Speak up and support action to stop weight-based discrimination. Talk to HCP about addressing IWB : Bias can impact behaviours and health. Self-stigma and self-blame can be addressed through behavioural interventions, consistent with the principles of cognitive therapy and acceptance and commitment therapy.	Try focusing on improving healthy habits and quality of life rather than weight loss. Weight is not a behaviour and should not be a target for behaviour change.

	Fruh et al. 2021 [3]	HCP	NR	NR
	Gallagher et al. 2021 [4]	HCP in primary care	NR	NR
	Braddock et al. 2023 [5]	Paediatricians	NR	NR
	Crowley 2023 [6]	HCP	NR	NR
	Hill et al. 2023 [7]	HCP	NR	NR
Consensus statement	Albury et al. 2020 [8]	HCP	NR	NR
	Rubino et al. 2020 [9]	HCP	NR	NR
	STRIPED 2020 [10]	Public health professionals	NR	NR
	Nadolsky et al. 2023 [11]	HCP	NR	NR
Position statement	Eisenberg et al. 2019 [12]	HCP, patients, public health	NR	NR
	Nutter et al. 2023 [13]	HCP	NR	NR

Abkürzungen: HCP – healthcare professionals, IWB – Internalised weight bias, NR – Not reported

Tabelle A1-8: Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich für Betroffene (Reviews)

Review type	Authors, year [Reference]	Target population	Acknowledgement: Weight bias experiencet	Practical support
Systematic review	Alberga et al. 2016 [14]	HCP	NR	NR
Scoping review	Nagpal et al. 2020 [15]	Prenatal HCP and pregnant women with a BMI ≥ 30.0 kg/m ²	NR	<u>Support for conversations</u> : handouts that could be given to the patient in an appointment to initiate conversation or answer additional questions they may have. Offering educational resources to patients about obesity during pregnancy and detailed explanations for referral of care.
	Malik et al. 2023 [16]	Dentists	NR	NR
Qualitative review	Ryan et al. 2023 [17]	HCP	Patients' perceptions of how weight stigma impacts the provision of care for obesity: Seeking treatment options and gaining <u>equitable access</u> to suitable healthcare services.	NR

Not defined	Tylka et al. 2014 [18]	HCP, patients, policy	<p><u>Get help from mental health professionals:</u> Target IWB: reduce placing blame on one's body and others bodies, challenge adoption of societal appearance ideals, consider <u>conducting cognitive dissonance interventions</u> (e.g., to lessen adherence to unrealistic appearance ideals). Target body shame: to lessen patients embarrassment, hatred, and dissatisfaction toward their bodies by helping them define "beauty" more broadly and to appreciate their bodies (cognitive dissonance interventions).</p>	<p><u>Get help from physicians:</u> Redirect focus from external critique of weight and size to a "partnership" with the body: direct attention to what is happening within their bodies rather than "picking apart" their appearance. The HAES model applied in personal life: Provide oneself with the features of life one finds sustainable, within the context of one's life, that support well-being. Reconnect with body's cues to make decisions about what one needs now. When hurt, direct the anger to the person, who hurt (you) rather than blaming the body. Look for direct ways to improve life and health that do not require a thinner body. Know one's worth is not based on health.</p>
	Sharma et al. 2018 [19]	HCP, educational sector, policy	NR	NR
	Sackett et al. 2019 [20]	HCP (physicians, osteopahty)	NR	NR
	Puhl and Lessard 2020 [21]	Pediatrics and youth patients	NR	Empowerment of families to address weight stigma in the home and school settings.
	Mauldin et al. 2022 [22]	Clinicians	NR	NR
	Puhl 2023 [23]	HCP, students and general health care system	NR	NR
	Westbury et al. [24]	Educational sector, policy	NR	NR
	Darling et al. 2024 [25]	Paediatricians	NR	NR
	Olson et al. 2024 [26]	Clinicians and midwives	NR	NR

Abkürzungen: HAES – Health At Every Size, HCP – Healthcare professionals, IWB – Internalised weight bias, NR – Not reported

1.1.4

Strategien gegen strukturelle Barrieren der Gewichtsstigmatisierung

Tabelle A1-9: Strategien strukturellen Barrieren der Gewichtsstigmatisierung (Leitlinien, Konsenspapiere, Positionspapiere)

Guidance type	Authors, year [Reference]	Target population	Stigma-free environment	Equipment for all body sizes
Specific guidance with focus on weight stigma	WHO 2017 [1]	Public health	Create new standards for the portrayal of individuals with obesity and shift from use of imagery and language that depict people living with obesity in a negative light. Consider the following: Avoiding photographs that place unnecessary emphasis on excess weight or that isolate an individual's body parts (e.g., images that disproportionately show abdomen or lower body; images that show bare midriff to emphasise excess weight). Avoiding pictures that show individuals from the neck down (or with face blocked) for anonymity (e.g., images that show individuals with their head cut out of the image). Avoiding photographs that perpetuate a stereotype (e.g., eating junk food, engaging in sedentary behaviour) and do not share context with the accompanying written content.	NR
	Kirk et al. 2020 [2]	HCP, patients, public health	HCP should ensure their clinical environment is accessible, safe and respectful for all patients regardless of their weight or size. Place weighing scales in private areas.	HCP should consider how their office's physical space accommodates people of all sizes and ensure they have properly sized equipment (e.g, blood pressure cuffs, gowns, chairs, beds) ready in clinical rooms prior to patients arriving.
	Fruh et al. 2021 [3]	HCP	Stigma-free waiting room: seating without armrests, wider chairs to accommodate all sizes, adequate space between each chair, avoid publications that contain offensive or discriminating images. Bathrooms equipped with hand rails that can comfortably accommodate individuals of all sizes. Laboratory draw chair that will comfortably accommodate all individuals. Respectful and compassionate communication with office staff.	Proper size gowns , wide examination tables with sturdy stool or step with handles, measuring tape, appropriate vaginal speculum sizes, blood pressure cuffs in all sizes, high-capacity weight scales (225–315 kg) in a private location (never call out weights), hand-held Doppler assessment of the fetal heart rate may not be feasible in some cases before 16 to 20 weeks; sometimes, transabdominal ultrasonography is necessary.
	Gallagher et al. 2021 [4]	HCP in primary care	NR	NR
	Braddock et al. 2023 [5]	Paediatricians	Waiting and exam rooms: use furniture that is safe and comfortable to all body habitus weights, and feature appropriate reading materials that respectfully depict	Use equipment that is validated for patients with higher weights and different sizes (e.g. blood pressure cuffs, scales). In the exam room, offer gowns/robes that are appropriately sized to provide modesty and coverage.

			<p>people with obesity and avoid glorifying thinness as the standard of beauty.</p> <p>When triaging the patient, ensure privacy when weights are obtained (and weigh with permission).</p> <p>Evaluate the messaging and culture of the organisation: <i>Who is portrayed on the organisation's website? What words are used to describe the weight management clinic (if there is one). Is person first language and appropriate terminology used? Are images of individuals with obesity respectful?</i></p> <p>It is important to be aware of the messaging and imaging portrayed of patients with and without obesity on advertising and media. Guidelines are available for internal organisational media and for advocating for appropriate media coverage in the community. All members of the organisation have a responsibility to identify examples and collaborate to make changes when inappropriate materials are encountered.</p>	
	Crowley 2023 [6]	HCP	Use resources available for appropriate images of people with obesity for use at all levels of practice from patient-facing materials to Web marketing to social media and professional presentations.	Ensure that the office has seating, restrooms, examination rooms, tables, scales, blood pressure cuffs and gowns that accommodate people in a larger body. Scales that have a wide platform with handles for support and that are situated in a physical area that offers privacy is important.
	Hill et al. 2023 [7]	HCP	NR	NR
Consensus statement	Albury et al. 2020 [8]	HCP	Chairs with arms and weight limits can be restrictive. Tight spaces with back-to-back chairs can be hard to navigate.	Appropriate medical equipment should be available, including scales that weigh up to 150 kg in a private space and a range of different sized cuffs to measure blood pressure
	Rubino et al. 2020 [9]	HCP	Appropriate infrastructure for the care and management of people with obesity, including severe obesity, must be standard requirement for accreditation of medical facilities and hospitals.(U)	NR
	STRIPED 2020 [10]	Public health professionals	NR	NR
	Nadolsky et al. 2023 [11]	HCP	NR	NR
Position statement	Eisenberg et al. 2019 [12]	HCP, patients, public health	Facility resources must be made available: specific accommodations are needed to appropriately treat people affected by obesity, e.g., furniture (e.g., chairs, exam tables, operating room tables, hospital beds, wheelchairs, etc.), and facility changes (e.g., doorways, floor-mounted toilets, etc.).	Equipment (e.g., blood pressure cuffs, scales, sequential compression devices, etc.).
	Nutter et al. 2023 [13]	HCP	NR	NR

Abkürzungen: HCP – Healthcare professionals, NR – Not reported

Tabelle A1-10: Strategien strukturellen Barrieren der Gewichtsstigmatisierung (Reviews)

Review type	Authors, year	Target population	Stigma-free environment	Equipment for all body sizes
Systematic review	Alberga et al. 2016 [14]	HCP	NR	NR
Scoping review	Nagpal et al. 2020 [15]	Prenatal HCP and pregnant women with a BMI ≥ 30.0 kg/m ²	NR	NR
	Malik et al. 2023 [16]	Dentists	Provide tailored and suitable services or accommodations, e.g., adequate doorway entry to the practice, adequate toilet facilities, narrow waiting room chairs without arm rests and suitable features of the dental chair.	Consider dental chair dimensions and weight limits.
Qualitative review	Ryan et al. 2023 [17]	HCP	NR	HCPs should be cognisant of potential environmental stressors such as equipment as it is important that healthcare settings are adapted to accommodate higher weight.
Not defined	Tylka et al. 2014 [18]	HCP, patients, policy	Does the office set-up communicate to all patients that their healthcare needs will be met there without shame or discrimination?, Is the office stigmatising from the moment they arrive?, Do waiting and exam rooms have furniture that fits higher-weight individuals?, Do office staff automatically weigh in every patient, on a scale in a public hallway, even if the patient is coming in for an issue totally unrelated to weight?, What is the office culture around weight?, Has weight bias ever been addressed by the entire staff, such as through continuing education or sensitivity training?	Are gowns and medical equipment (e.g. blood pressure cuffs) stocked to fit higher-weight patients?
	Sharma et al. 2018 [19]	HCP, educational sector, policy	NR	NR
	Sackett et al. 2019 [20]	HCP (e.g., physicians, osteopahty)	The office and waiting room suite should accommodate patients of all body habitus, e.g., armless chairs in the waiting room would be more comfortable for larger patients. Although the weight measurement at office visits should not be skipped, patients can be offered the option to not view their weight at every visit - in patients with weight-related anxiety, decreasing the emphasis on weight by not allowing them to see their weight or BMI during the visit can help them focus on optimal health and decrease anxiety.	A range of gown sizes and medical equipment would be suitable for patients of varying sizes.

	Puhl and Lessard 2020 [21]	Pediatrics and youth patients	Stigma-free clinical care settings where youth of all body sizes are supported and treated respectfully.	NR
	Mauldin et al. 2022 [22]	Clinicians	Provide a safe, shame-free environment: wide waiting room chairs that are comfortable and safe, including some that are armless; stable exam tables are stable. Demonstrate that your practice values diversity, such as a Mission Statement, non-stereotypical images in magazines, advertisements, pamphlets, and artwork.	Make appropriate-sized medical equipment readily accessible, such as scales, blood pressure cuffs, gowns, speculums, and needles for vaccinations.
	Puhl 2023 [23]	HCP, students and general health care system	NR	Ensure that medical equipment, scales, patient gowns, and seating options can accommodate patients with larger body sizes.
	Westbury et al. [24]	Educational sector, policy	NR	NR
	Darling et al. 2024 [25]	Paediatricians	NR	NR
	Olson et al. 2024 [26]	Clinicians and midwives	Provide suitable chairs without arm rests. Promote of privacy for measuring weight via a scale. Provide shamless body imagery in artwork and signage in the office, waiting room reading material, and marketing and patient resource materials.	Provide suitable blood pressure cuffs, and gowns.

Abkürzungen: HCP – Healthcare professionals, NR – Not reported

1.1.5 Strategien gegen Gewichtsstigmatisierung im Bereich Policy

Tabelle A1-11: Policy-Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich (Leitlinien)

Guidance type	Specific guidance with focus on weight stigma						
	WHO 2017 [1]	Kirk et al. 2020 [2]	Fruh et al. 2021 [3]	Gallagher et al. 2021 [4]	Braddock et al. 2023 [5]	Crowley 2023 [5]	Hill et al. 2023 [7]
Target population	Public health	HCP, patients, public health	HCP	HCP in primary care	Paediatricians	HCP	HCP
Public Health	Assess some of the unintended consequences of current <u>health-promotion strategies</u> on the lives and experiences of people with obesity. Do programmes and services simplify obesity?	Public health policy makers should avoid using stigmatising language and images. Shaming can increase the likelihood of individuals pursuing	NR	NR	Public health practices and messages should not use stigmatising approaches to	NR	NR

	<p>Do programmes and services use stigmatising language? Is there an opportunity to promote body positivity/confidence in children and young people in health promotion while also promoting healthier diets and physical activity?</p> <p><u>Strengthen people-centred health systems and public health:</u> Adopt people-first language in health systems and public health care services, such as a “patient or person with obesity” rather than “obese patient”. Engage people with obesity in the development of public health and primary health care programmes and services. Address weight bias in primary health care services and develop health care models that support the needs of people with obesity. Apply integrated chronic care frameworks to improve patient experience and outcomes in preventing and managing obesity.</p> <p><u>Create supportive communities and healthy environments:</u> Consider the unintended consequences of simplistic obesity narratives and address all the factors (social, environmental) that drive obesity. Promote mental health resilience and body positivity among children, young people and adults with obesity. Sensitise HCP, educators and policy.</p>	<p>unhealthy behaviours and has no place in an evidence-based approach to obesity management. Avoid making assumptions in population health policies that healthy behaviours will or should result in weight change. Weight is not a behaviour and should not be a target for behaviour change. Avoid evaluating healthy eating and physical activity policies, programmes and campaigns in terms of population-level weight or BMI outcomes. Instead, emphasise health and quality of life for people of all sizes. Public health policy makers should consider weight bias and obesity stigma as added burdens on population health outcomes and develop interventions to address them. To avoid compounding the problem, we encourage policy makers to do no harm, to develop people-centred policies that move beyond personal responsibility, recognise the complexity of obesity and promote health, dignity and respect, regardless of body weight or shape.</p>			<p>promote anti-obesity campaigns. Public health authorities should identify and reverse policies that promote weight-based stigma, while increasing scientific rigor in obesity-related public policy.</p>		
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Legislation	NR	NR	NR	NR	NR	Legislations to prohibit weight discrimination.	NR
Media	NR	NR	NR	NR	Media, policy makers, educators, HCPs, academic institutions, public health agencies, and government must ensure that the messages and narrative of obesity are free from stigma and congruent with modern scientific evidence.	Stringent media guidelines.	Subvert, not reinforce, harmful media perspectives of people in larger bodies. Use non-stigmatising images and language, especially on websites and social media.
Others	NR	Because weight bias contributes to health and social inequalities, advocate for and support people living with obesity. This includes supporting policy action to prevent weight bias and weight-based discrimination.	NR	NR	Weight-based stigma and obesity discrimination should not be tolerated in education, healthcare, or public-policy sectors. Obesity should be recognised and treated as a chronic disease in healthcare and policy sectors. Explaining the gap between scientific evidence and the conventional narrative of obesity built around unproven assumptions and misconceptions may help reduce weight bias and alleviate its numerous harmful effects.	Financial incentives for avoiding bias and stigma.	General societal recommendations prompting all people to acknowledge and adjust our attitudes towards larger-bodied people: Acknowledge the complex and multifactorial nature of body weight. Move away from the moral judgement and pathologisation of larger bodies. Listen to the voice of people with experience of living in larger bodies. Acknowledge different and varying cultural beliefs around body size.

Abkürzungen: HCP – Healthcare professionals, NR – Not reported

Table A1-12: Policy-Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich (Konsenspapiere und Positionspapiere)

Guidance type	Consensus statement			Position statement		
Authors, year [Reference]	Albury et al. 2020 [8]	Rubino et al. 2020 [9]	STRIPED 2020 [10]	Nadolsky et al. 2023 [11]	Eisenberg et al. 2019 [12]	Nutter et al. 2023 [13]
Target population	HCP	HCP	Public health professionals	HCP	HCP, patients, public health	HCP
Public Health	NR	Public health practices and messages should not use stigmatising approaches to promote anti-obesity campaigns. (A) Public health authorities should identify and reverse policies that promote weight-based stigma, while increasing scientific rigor in obesity-related public policy. (A)	Public health practice: Public health professionals should be aware of and concerned about weight stigma and its consequences and should become educated about weight stigma and its effects by doing the following: <u>Understanding:</u> How the presence of weight stigma across all domains and levels of public health is shaping our science (research questions, priorities, outcomes, and knowledge)?, How obesity research contributes to weight stigma?, Which stakeholder interests are represented on teams and how these might affect research and implementation outcomes?, How positive social and emotional support might mitigate the negative health effects of weight stigma? <u>Including:</u> Professionals living in larger bodies and the perspectives of people living in larger bodies in work. The voices of those who may be affected by research and interventions (e.g., children, parents, teachers, and people with lived experience) in design and implementation. People with experience of living in a larger body in research and intervention design and implementation. A focus on weight-inclusive approaches to training public health professionals. Research on weight stigma in public health training. Corporations, industries, government, and health care as stakeholders in strategic science to maximise opportunities for change and to understand constraints. Colleagues in obesity research in conversations about mitigating weight stigma. <u>Advocating:</u> Confronting weight stigma in all areas of public health, including at the highest levels of funding and governance. In research and practice to address what evidence shows to be the negative	NR	Educate the public: education of the public is essential for the meaningful implementation of the above recommendations.	Engage in weight-neutral health promotion: Given that current narratives equating weight and body size with health contribute to weight stigma, health promotion strategies should focus on health outcomes instead of weight. A shift is needed away from a focus on weight, weight loss, and a predetermined notion of “healthy weight” (based on BMI) towards a holistic focus on health and wellbeing for an individual, regardless of their weight or size.

			<p>consequences of weight stigma (e.g., avoidance of healthcare, greater cardiovascular risks, reduction in health-promoting behaviours). In policy and funding agencies to investigate and mitigate weight stigma in their approaches. For additional support for children and adolescents who are growing into larger bodies because they may be more likely to experience weight stigma than their peers. for making the field of public health more inclusive toward professionals living in larger bodies.</p> <p><u>To avoid harm:</u> Demand evidence of efficacy and safety before implementing interventions to improve health outcomes. Consider the risk of contributing to weight stigma and eating disorders before launching a new public health campaign, intervention, or research initiative. Monitor and evaluate unintended consequences related to weight stigma and eating disorder risk for all health-related interventions. Monitor all existing nutrition, diet, physical activity, mental health, and health-screening interventions for unintended consequences related to weight stigma and eating disorder risk. Monitor the use of experimental materials or communications involving body shape, size, or weight (e.g., images, BMI status notification) for iatrogenic harm. When designing public health interventions, ensure that spaces accommodate large bodies (e.g., appropriate seating). Be careful in the use of educational materials involving body shape, size, or examples of weight stigma when providing presentations or lectures. Seek input from or collaborate with people living in larger bodies. Remember that weight-loss focused interventions can create shame in people living in larger bodies.</p>			
<p>Legislation</p>	<p>NR</p>	<p>NR</p>	<p>NR</p>	<p>NR</p>	<p>NR</p>	<p>Governments and policymakers should consider weight stigma in all health promotion efforts and should engage with weight stigma researchers and people with lived experience in the</p>

						<p>development and evaluation of policy and legislative actions. Promote human rights-based approaches to tackle weight stigma and discrimination: While body weight or obesity may not be an explicitly protected characteristic in human rights codes, discrimination based on health status is prohibited in some countries. Further, discrimination based on weight in the workplace may also be a breach of employment law. Campaigning for weight-based human rights protections may contribute to efforts to reduce weight stigma, promoting the notion that all people are equal in dignity and basic human rights.</p>
Media	NR	NR	<p>Diversity of body size/shape, race, ethnicity, gender, and appearance in any advertising or social media materials.</p> <p>Ensure any marketing materials include diversity of body size/shape, race, ethnicity, gender, and appearance.</p>	NR	NR	<p>Use non-stigmatising language and imagery: In communication about body weight and obesity, language and imagery should not perpetuate stereotypes or blame and shame individuals for their weight. Communications should also avoid alarming, catastrophising, or combative language. This recommendation needs to be particularly reinforced among the media and in public health communication.</p>

Others	NR	Explaining the gap between scientific evidence and the conventional narrative of obesity built around unproven assumptions and misconceptions may help reduce weight bias and alleviate its numerous harmful effects. (A)	PH professionals should work to reduce cultural weight stigma to improve health outcomes for all people: intervening at the macro-level (i.e., influencing beauty/fashion/food industries) for example by: Working to tighten regulations around industries that profit from consumers having negative body image (e.g., the diet, food, media, advertising, and fashion industries). Advocating for increasing size diversity in the fashion industry. Leveraging corporate social responsibility to reduce weight stigma (e.g., by encouraging advertisers not to alter advertising images). Demanding manufacturers make clothing equally available for larger and smaller bodies.	NR	NR	Increase the global evidence base: Future research should explore how weight stigma is enacted and experienced across countries and cultures. Gray literature and other forms of media may provide evidence of weight stigma in societies where peer-reviewed publications are lacking.
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Abkürzungen: HCP – Healthcare professionals, NR – Not reported

Tabelle A1-13: Policy-Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich (Reviews)

Review type	Systematic review	Scoping review		Qualitative review	Not defined		
Authors, year [Reference]	Alberga et al. 2016 [14]	Nagpal et al. 2020 [15]	Malik et al. 2023 [16]	Ryan et al. 2023 [17]	Tylka et al. 2014 [18]	Sharma et al. 2018 [19]	Sackett et al. 2019 [20]
Target population	HCP	Prenatal HCP and pregnant women with a BMI ≥ 30.0 kg/m ²	Dentists	HCP	HCP, patients, policy	HCP, educational sector, policy	HCP (e.g., physicians, osteopahty)
Public Health	NR	NR	NR	NR	The <u>weight-inclusive approach</u> tries to minimise weight stigma and thus may help patients feel comfortable in the healthcare setting, more able to discuss their health concerns, and less likely to experience the healthcare encounter as stigmatising by HCP (recommended alternative to weight-normative approach): Every body is capable of achieving health and well-being independent of weight, given access to	<u>Existing Canadian Clinical Practice Guidelines</u> for the management and treatment of obesity in adults <u>should be updated</u> to reflect advances in obesity management and treatment in order to support the development of evidence-based programmes and strategies by health systems, employers and health insurance companies. Having <u>active participation of individuals with obesity</u> can help change negative attitudes and beliefs about	NR

					<p>non-stigmatising healthcare. Weight is not a focal point for medical treatment or intervention. Examples: Health at Every Size (HAES, www.haescommunity.org), Health in Every Respect, Physical Activity at Every Size</p> <p><u>Principles of the HAES:</u></p> <p>Do no harm.</p> <p>Ensure that optimal health and well-being is provided to everyone, regardless of their weight.</p> <p>Maintain a holistic focus (not predominantly focusing on weight/weight loss).</p> <p>Encourage a process-focus rather than a end-goals focus for day-to-day quality of life.</p> <p>Critically evaluate the empirical evidence for weight loss treatments and incorporate sustainable, empirically supported practices into prevention and treatment efforts.</p> <p>Crete healthful, individualised practices and environments that are sustainable.</p> <p>Work to increase health access, autonomy, and social justice for all individuals along the entire weight spectrum and trust that people move toward greater health when given access to</p>	<p>obesity and facilitate the development of compassionate and equitable health promotion strategies.</p>	
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					stigma-free healthcare and opportunities.		
Legislation	NR	NR	NR	NR	NR	NR	NR
Media	NR	NR	NR	NR	NR	NR	NR
Others	NR	NR	Weight stigma is a collective responsibility: system-based strategies health-focused, weight-inclusive and use a multi-pronged approach targeting healthcare setting, higher levels of government and society are required.	NR	The HAES model applied in policy: provide environments that give access to all the things that support the well-being of human bodies of all sizes: Recess for all ages, abilities and sizes and redress structural racism and inequality. Living wages to provide time for self-care. Community involvement in making policy.	Creating resources to support policy makers address weight bias and obesity stigma. Coordinate weight bias and discrimination summit: purpose to raise awareness about weight bias and discrimination as it relates to obesity and its association to the health and well-being for HCP, students, policy makers, industry representatives, and educators. Using personal narratives from people living with obesity to engage audiences and communicate anti-discrimination messages. Recognise that weight bias and obesity stigma are significant barriers to helping people with obesity and enshrine rights in provincial/territorial human rights codes, workplace regulations, healthcare systems, and education policies.	NR

Abkürzungen: HCP – Healthcare professionals, NR – Not reported

Tabelle A1-14: Policy-Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitsbereich (Reviews continued)

Review type	Not defined					
Authors, year [Reference]	Puhl and Lessard 2020 [21]	Mauldin et al. 2022 [22]	Puhl 2023 [23]	Westbury et al. 2023 [24]	Darling et al. 2024 [25]	Olson et al. 2024 [26]

Target population	Pediatrics and youth patients	Clinicians	HCP, students and general health care system	Educational sector, policy	Paediatricians	Clinicians and midwives
Public Health	NR	NR	NR	<p>Addressing obesity stigma is necessary to improve the public health efforts to prevent and manage obesity, which despite global efforts has had limited success to date. A prerequisite for tackling the problem of obesity stigma within society is the generation of <u>high-quality research on effective interventions</u> that have consistent theoretical frameworks, strong study designs, and sound methodologies. Such data will facilitate the development of a consensus on the development of optimal strategies to reduce obesity stigma within society, and enable implementation of consistent and co-ordinated public health action.</p> <p>Shifting <u>public health messaging</u> away from obesity and towards healthy behaviours, or alternatively away from behaviour completely, to allow the appropriate focus on the environments where the behaviour takes place, may facilitate the deconstruction of obesity stigma.</p> <p>Position statements from government and public health organisations should demonstrate <u>non-stigmatisin language</u> and discourse around obesity.</p> <p>The <u>voices of people with obesity</u> should be amongst the forefront of these public health campaigns.</p>	NR	Re-evaluation of weight-centric practices and guidelines that equate BMI as a marker of health and determinant of risk are needed.
Legislation	NR	NR	NR	<p>Efforts to reduce obesity stigmatisation in the public domain could be spearheaded by <u>legislation to prohibit prejudice and discrimination on the basis of weight</u>: weight-based discrimination should be formally recognised as a legitimate social concern and be included in anti-discrimination acts that prohibit discrimination based on other personal characteristics such as sex, marital status, or disability.</p>	NR	NR

Media	NR	NR	NR	NR	NR	NR
Others	NR	<p><u>Social justice</u>: Where possible, work to increase health access, autonomy, and social justice for all individuals along the entire weight spectrum. Recognise the impact of social determinants of health, including the structural and political issues that affect health and well-being.</p> <p>Be aware of intersectionality; patients with multiple stigmatised identities may experience mutually reinforcing sources of oppression that can negatively impact their health. Remember, weight loss doesn't stop weight bias. Bias is a social justice issue. People deserve to live free of bias and prejudice no matter what they weigh.</p>	Efforts to ensure that broader health communication and narratives are free of stigma, bias, and blame.	NR	<p><u>Advocacy</u>: This includes neutralising the obesogenic environment and challenging instances of stigma such as in schools or films.</p>	NR

Abkürzungen: HCP – Healthcare professionals, NR – Not reported

1.2 Datenextraktionstabellen: Effektivität von Strategien zur Reduktion von Gewichtsstigmatisierung im Gesundheitswesen (FF2)

1.2.1 Eingeschlossene Literatur

Tabelle A1-15: Übersicht der eingeschlossenen randomisierten Kontrollstudien (n=11)

Autors, year	Study type	Country	Target population (n)
Matharu et al. 2014 [28]	RCT: Enrolled students were randomised with online software (www.randomizer.org/). Three evaluators who were unaware of the treatment group independently scored the open-ended answers with any disagreements resolved by discussion.	USA	Medical students (n=129: 63 vs 66): Baseline characteristics were similar in the two study groups: average age (25.1, SD 2.9 vs 25.2, SD 2.9), female (42% vs 49%). The study had an overall response rate of 23% among 1st year (28 vs 30) - and 2nd year (25 vs 30) students (only 16 3rd and 4th year medical students participated in the study). Students' baseline values on the explicit bias, implicit bias and empathy scales were 43 (SD 16), 0.47 (0.38) and 151 (12), respectively.
Olson et al. 2018 [29]	RCT: A random number generator was used to identify a unique randomisation sequence for each cohort. The first author generated the sequence and prepared sequentially numbered envelopes prior to enrolling participants. Study staff and participants were blinded to group assignment until the end of the baseline assessment when assignment was revealed.	USA	Women with overweight or obesity (BMI ≥ 25 and < 35) who were interested in weight loss. 61 women were enrolled across four cohorts ranging from 13-17 in size. Exclusion: currently pregnant or planning to become pregnant within 2 months, breast feeding, within 9 months of childbirth, participating in or planning to participate in a formal weight loss programme in the next two months, self-reported an eating disorder or substance abuse, physically disabled or reported a chronic condition that would impact ability to exercise or lose weight (e.g., injury to lower extremity limiting mobility), mental or cognitive disorder that would preclude following instructions. Consistent with a per-protocol-analysis, individuals who did not meet criteria for body dissatisfaction (n=17), did not attend all Body Project sessions (n=10 total), or did not complete both assessments (n=15) were excluded to ensure greatest power to detect treatment effects. The resulting sample included 32 individuals (n=15 in Standard, n=17 in Standard +Body Project). Average age of 41.8 years (SD: 10.7, range: 25-69) and average BMI of 30.7 (SD: 3.0, range: 25-36.8). Because body image is studied extensively among adolescent and young adult females, we aimed to address this concern in an understudied age group (≥ 25 years). Attrition from the study was approximately 24% and did not significantly differ by condition (Standard +Body Project: 10/32; Standard: 5/29).

Cohen et al. 2019 [30]	RCT: randomised to read one of three articles. Not all physician trainees mentioned weight and as such, these individuals were excluded from all following analyses. For example, a physician trainee who did not mention weight would have missing data for the stigmatising language item as opposed to a code indicating that s/he did not use stigmatising language.	USA	<p>Physicians-trainees (n=119: 41 vs 38 vs 40): 3rd (45.4%) and 4th year (47.9%) medical students, and 1st year (4.9%) residents in internal medicine and family practice). No significant differences between condition groups were detected: mean age 26.3 (SD 2.5), 52.1% female, mean BMI 24.0 (SD 3.6) kg/m².</p> <p>Exclusion criteria included having a seizure or vestibular disorder, being highly prone to motion sickness, and having poor, uncorrected hearing or vision.</p>
Nickel et al. 2019 [31]	<p>RCT: Individual randomisation (general population, nurses, physicians) and cluster randomisation (medical students, nurses in training).</p> <p>Patients with obesity were not randomised because they were already informed about the condition in detail through their own experience and regular visits at the obesity clinic.</p>	Germany	<p>Six different groups (n=949: 457 vs 489): General population (159 from public places), patients with obesity (82 obesity outpatient clinics), nurses in training (202 nursing schools), medical students (208 during medical lectures at the University of Heidelberg), certified nurses and physicians (150 and 148 from congresses, training courses, and in hospitals).</p> <p>General population: mean age 34.2, mean BMI 23.5, female 57.1%</p> <p>Patients: mean age 45.9, mean BMI 39.1 kg/m², female 64.6%</p> <p>Nursing in training: mean age 22.1, mean BMI 22.8, female 83.4%</p> <p>Nurses: mean age 35.3, mean BMI 24.9, female 76.8%</p> <p>Medical students: mean age 22.4, mean BMI 23.5, female 47.9%</p> <p>Physicians: mean age 39, mean BMI 23.5, female 47.9%</p> <p>6.4% of the participants did not respond or did not complete the FPS entirely.</p>
Fitterman-Harris et al. 2021 [32]	<p>A two-arm, quasi-randomised, controlled experimental design: Participants were quasi-randomly assigned to either the intervention or control group in a 1:1 ratio by the Principal Investigator. Using an alphabetical list of students generated by the Curricular Affairs Office within the School of Medicine, students were assigned to a group in alternating succession (e.g., Student 1 – intervention group, Student 2 – control group). Students were informed as to which room to report, not knowing to which group they had been assigned. Groups were led by trained graduate student volunteers who were blinded as to whether they were leading an intervention or control group.</p>	USA	<p>1st year medical students (n=101):</p> <p>Intervention (n=48 - 7 groups)</p> <p>Control (n=53 - 4 groups)</p> <p>Mean age (SD): 23.55 (1.65), 46.50% female and 53.50% male, mean current BMI (SD): 23.26 (3.58).</p> <p>Baseline scores on the AFAT and UMB-FAT suggested moderately low levels of explicit bias across groups, with a mean composite AFAT score of 89.07 on a scale ranging from 47 to 235. The mean score across groups for the total UMB-FAT score was 2.85, with higher scores indicative of greater bias on a scale from 1 to 7.</p>
Oliver et al. 2021 [33]	<p>Cluster-RCT: randomly allocated to either the intervention group or control group. The participants and their clinical instructors were blinded to the cluster group assignments. The results have shown that this cluster-randomised trial has a very large cluster effect, as</p>	USA	<p>13 medical-surgical clinical practicum groups, consisting of 6-8 3rd year undergraduate nursing students (n=103). Of 103 eligible students, 99 gave consent to participate. Seven clinical groups, with 53 (53.5%) students, were allocated randomly to the control group which received the WBR; six clinical groups, with 46 (46.5%) students were allocated to the treatment group which received the WBR-I Intervention.</p>

	measured by ICCs of 0.23 and 0.35 for ATOP and BAOP, respectively.		<p>Inclusion criteria: at least 18 years of age in the first semester of the third year of their nursing curriculum.</p> <p>Average BMI of the sample was 22.5 kg/m².</p>
Welzel et al. 2021 [34]	<p>INTERACT study comprised a cluster-randomised controlled trial (cRCT) with an intervention condition (IG) and a waiting list condition (CG). GPs were recruited based on a primary care physician network, as previously established by the Institute of Social Medicine, Occupational Health and Public Health of the University of Leipzig (ISAP).</p> <p>GPs were sequentially allocated to intervention or control group using a computerised random number generator in an adaptive randomisation process (biased coin design). Blinding of GPs towards the treatment groups was not possible since GPs were directly addressed by the intervention.</p> <p>Patients were blinded to their group allocation.</p>	Germany	<p>Primary care practices (n=50, 25 vs 25): There were no in- or exclusion criteria for GPs. 42 GPs (response rate: 84%) returned questionnaires at the 12-month follow-up assessment.</p> <p>Mean age 48.6 years, had an average working experience of 20.6 years and were mostly female (61.2%). GPs of the intervention group had higher FPS scores compared to control (IG: mean 3.8, SD 0.3 vs CG: 3.6, 0.4, p=0.008). 77.9% evaluated their expertise in obesity counselling as good or very good, 20.4% as sufficient, and 2.0% as insufficient.</p> <p>Patients with overweight/ obesity (n=135, 65 vs 70): The patient sample included adult patients with obesity recruited through participating GPs. Patients were included if: (1) they had a BMI ≥ 30 kg/m², (2) they were between 18-60 years old and (3) they had sufficient proficiency in the German language. Patients were excluded if they had an acute medical condition (physical or mental) that required prioritised treatment and made study participation impossible according to the attending GP. 127 patients returned questionnaires at 6-month follow-up (response rate: 94.1%) and 119 at 12-month follow-up (response rate: 88.1%).</p> <p>Mean age 43.3 years, average BMI of 39.0 kg/m², female (62.2%).</p>
Wijayatunga et al. 2021 [35]	<p>RCT: Participants were randomised using the randomisation function in Qualtrics to watch one of the videos after the administration of the pre-intervention survey. Participants were blinded about the purpose of the study and were told that the study was for testing the general effectiveness of online education. Researchers were not blinded when performing data analysis and they were not directly involved in the randomisation or data collection.</p>	USA	<p>Registered dietitians recruited from a random sample of 5000 individuals from the Commission on Dietetic Registration (CDR) database. A total of 300 participants enrolled in our study, but only 166 participants completed the pre-intervention survey to be randomised to one of the study groups based on the video shown. A total of 147 participants watched the video:</p> <p>Intervention (n=47) Control 1 (positive controle, n=47) Control 2 (negative control, n=53)</p> <p>Female: intervention 97.9%, control 1 97.9%, control 2 94.2%</p> <p>BMI (kg/m²): mean 23.74 (SD 3.92), 23.63 (4.00), 23.32 (3.30)</p> <p>32.7% of the participants had prior weight bias training.</p>
Potts et al. 2022 [36]	<p>RCT: Participants were automatically randomly assigned by Qualtrics to one of three conditions: guided self-help with phone coaching (GSH-P), guided self-help with email prompts (GSH-E), or a waitlist condition. Chance of allocation to condition was equivalent between conditions (1:1:1) without blocking or stratifying by any variables.</p>	USA	<p>Patients with overweight/ obesity who experienced internalised weight bias (n=55: GSHP n=17, GSH-E n=20, waiting list n=18): ≥ 18-64 years of age, residing in the United States, BMI ≥ 27.5 kg/m², score of ≥ 36 on the Weight Self-Stigma Questionnaire, indicating problematic weight self-stigma. Potential participants were excluded if they were pregnant, had chest pain, dizziness, or cardiovascular disease, or had a serious psychological diagnosis that affected their functioning.</p> <p>Mean age of 38.65 (SD 12.40) and a mean BMI of 37.01 (SD 6.51), female 81.8% vs 18.2% male, majority previously participated in ≥ 1 structured weight loss intervention, with</p>

			the most frequently endorsed being exercise classes (67%), self-guided diet programme (58%), and commercial weight loss programme (56%). 36/55 completed the posttreatment assessment, with no difference between conditions on rates of assessment completion.
Joseph et al. 2023 [37]	RCT: IAT blocks were randomised so that they were not presented in the same order for all participants.	USA	Nursing students (n=189: 80 vs 109): Inclusion criteria: at least 18 years old, proficient in reading, listening, and writing English, enrolled part-time or full-time in a nursing training programme, and have access to a desktop or laptop computer with audio and/or speakers. Mean age of 29.77 (SD 10.39), women (95.8%), full-time (86.8%) in a Bachelor of Science, in Nursing programme (73.5%) and identified as smaller-bodied (38.1%). Statistically significant difference between the groups on the SATAQ-4, $p = 0.05$, with higher levels of internalisation of the thin ideal for the intervention group (mean 16.67, SD 3.97) compared to the control group (15.43, 4.48) at baseline.
Pearl et al. 2023 [38]	RCT: randomised in a 1:1 ratio, in blocks of four, to one of two treatment groups: standard behavioural weight loss (BWL) with the added Weight Bias Internalization and Stigma (Weight BIAS) Program, or standard BWL alone. The randomisation blocks were determined by a statistician unaffiliated with the study, and participants were randomised sequentially to their treatment condition by a staff member masked to the randomisation blocks. Participants, study investigators, and staff (including assessors) were not masked to group assignments after randomisation.	USA	Participants were 105 treatment-seeking men and women , ages ≥ 18 years old, who had obesity, defined as a BMI ≥ 30 kg/m ² , or with a BMI ≥ 27 kg/m ² with a health condition that confers CVD risk. Eligible participants reported a history of experiencing weight bias (i.e., teasing/bullying, discrimination, or unfair treatment due to weight) and a high level of IWS, as defined by a score of 4.0 on the Weight Bias Internalization Scale. Participants were eligible to participate if they exhibited mild to moderate severity of depression, anxiety, or binge eating disorder, because elevated WBIS scores are associated with these conditions. Exclusion criteria included: Type 1 or 2 diabetes; uncontrolled hypertension; a cardiovascular event in the past year; loss of $\geq 5\%$ of initial weight in the past 3 months or $\geq 10\%$ in the past 2 years; participation in psychotherapy related to weight in the last 3 months; severe symptoms of depression, anxiety, or binge eating disorder, or any severity of bulimia nervosa or thought or substance use disorder; or current, active suicidal ideation and/or a suicide attempt in the past year, medications known to significantly affect weight, history of bariatric surgery, or reported obtaining ≥ 150 min of structured physical activity per week. Women who were nursing, pregnant, or planning to become pregnant in the next 16 months were not eligible to participate due to contraindications for weight loss. Mean age 49.06 (SD 12.40) years, 90.48% female, mean BMI 37.95 (SD 5.54) kg/m ² . No significant differences were found between groups at baseline for any characteristic or measure.

Table A1-16: Übersicht der eingeschlossenen nicht-randomisierten Kontrollstudien (n=3)

Autors, year	Study type	Country	Target population (n)
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Wijayatunga et al. 2019 [39]	NRCT: parallel group, prospective quasi-experimental study: no information about a quasi-randomisation.	USA	Kinesiology undergraduate students typically in their 3rd or 4th year (n=76, drop-outs n=9): Intervention (n=33) Control (n=34) 35.8% males and 64.2% females; mean age (SD) of 21.76 (1.43) years and a mean body mass index (BMI) (SD) of 25.09 (4.51) kg/m ²
Jones et al. 2021 [40]	NRCT: pre- and post-test design (participated in seminar), with reference control group (online survey responses only)	Canada	Physiotherapists : Of the 418 participants who submitted responses, 383 submitted online responses (control) and 27 participants (intervention) completed the surveys before and after the seminar. Physiotherapists were eligible for either group of the study if they held a current license to practice in the province of Alberta, Canada. Approximately 84% (n = 343) of the cohort were female; The majority of the seminar group (24, 88.9%) and online group (265, 69%) reported 10 or more years of clinical experience.
Nestorowicz et al. 2021 [41]	NRCT: students self-selected to be in the experimental group	USA	1st year medical students (n=45): Intervention: n=24 Control: n=21 38% male and 62% female; 87% below 24 years of age, perception to have the right weight 84% and to be overweight 13% or underweight 2%

Tabelle A1-17: Übersicht der Vorher-Nachher-Studien (n=10)

Autors, year	Study type	Country	Target population (n)
Kushner et al. 2014 [42]	Pre-post design	USA	1st year medical students (n=127): The completion rate was 81% for total class enrollment of 157 students. Students were 24 ± 2.8 years old, 47% female; 50% white, 22% Asian, 11% Hispanic and 4% Black. Self-report data on student's height, weight and computed BMI was also obtained; 15.3% of the sample had a calculated BMI >25 kg/m ² .
Molloy et al. 2016 [43]	Pre-post design	USA	1st semester nursing students in bariatric surgery (n=70) enrolled in the introductory clinical nursing course of an accelerated BSN programme. Students have at least a baccalaureate degree in another field and no previous nursing education. Most students were female (93%) and white (66%) and ranged in age from 20 to 48 years, with a mean age of 25.5 years. Mean BMI, calculated from self-reported weight and height, was 24.2 (SD, 3.7) kg/m ² . 69% of participants perceived their weight as normal, whereas 27% perceived themselves as overweight, 3% as obese, and 1% as underweight. All students held bachelor's degrees; a wide array of majors was reported, with biology (26%) being the most prevalent. Five students (14%) also had a master's degree. Six students (9%) reported attending a previous educational offering with some focus on obesity.

Gayer et al. 2017 [44]	Pre-post design	USA	Osteopathic students in the classes of 2013 - 2018 (n=718)
Barra et al. 2018 [45]	Pre-post design	USA	Nursing students at the 3rd and 4th year level of undergraduate baccalaureate nursing education enrolled in medical surgical clinical practicum (n=103). Students were limited to one clinical faculty instructor's group within a specified hospital or nursing home.
Geller et al. 2018 [46]	Pre-post design	USA	1st year medical student cohorts of approximately 120 students each (range: 108-119). Each cohort was subdivided into 6 small groups of 20 students. 677 pre-session survey; 59 follow-up survey. 50% of respondents male and 49% female (1% no answer).
Brochu et al. 2020 [47]	Pre-post design	USA	Clinical psychology graduate students , predoctoral interns, and postdoctoral fellows (n=45): 28 identified as women and 16 identified as men. They ranged in age from 24 to 41 years (M = 27.5, SD = 3.71). Most participants identified as White (n = 28, 62%); the remaining identified as Hispanic or Latinx (n = 8, 18%), Asian (n = 5, 11%), multiracial (n = 2, 4%), and Black (n = 1, 2%). One participant did not report their demographics.
Oliver et al. 2020 [48]	Pre-post design (originally mixed-methods study, but qualitative data are reported separately)	USA	3rd year nursing students : each clinical group had 6-8 students. A total of 125 students at least 18 years old: 6 males, 119 female.
Werkhoven et al. 2021 [49]	Pre-post design	AUS	Undergraduate pre-service health educators and & professionals (n=124). Students who enrolled in the undergraduate nutrition elective took part in the intervention: The majority (>60%) of students enrolled in the elective were undertaking health-related degrees, destined for professions involving health education and nutrition instruction. The students who took part in this study were mostly in their first year of undergraduate study, potentially with no prior nutrition- or science-based education before enrolment into the elective. The mean age was 21 years (SD = 2.1, range: 18-23), 66% of the sample were female and 34 per cent were male. 70% of the cohort had a body mass index categorising them in the normal weight status with 15% classified as overweight, 1% as obese and 14% as underweight.
Renold et al. 2023 [50]	Pre-post design	Switzerland	3rd and 4th year medical students (n=79): The proportion of females was 60.8%, the mean age of students at baseline was 23.05 ± 2.48 years, and the mean BMI was 21.59 ± 2.56 kg/m ² .
Oliver et al. 2024 [51]	Pre-post design	USA	Nursing students in their clinical year (n=19) and 10 nursing students participated in the post-WBR intervention data collection. However, only 7 nursing practitioners (NP) students consistently identified their unique participant number (Student ID number); thus, only 7 participants' data are available for pre-SBE and post-SBE data analyses (data attrition rate of 63.16%). Of the final postintervention sample with complete data (n = 7), the majority of NP students self-identified as female (85.70%; n = 6) and White (85.70%, n = 6), with an average of around 13 years of clinical practice experience. Only one NP student self-identified as living with overweight (14.30%), and 71.40% (n = 5) reported having family members living with overweight or with obesity.

Trofymenko et al. 2024 [52]	Pre-post design	USA	1st year medical students (n=103): Most of the participants identified as female (53%), White/non-Hispanic (47%) and Hispanic (18%). Most of the participants (88%) reported average, less than average, or poor knowledge of obesity treatment guidelines, and 63% had 1h or less of prior training.
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Tabelle A1-18: Übersicht der Mixed-Methods-Studien (n=3) und der qualitativen Studien (n=2)

Autors, year	Study type	Country	Target population (n)
Luig 2020 [53]	Multi-methods	Canada	1st year family medicine residents of two cohorts (fall 2015 and spring 2016) (n=61). Written consent was obtained from 42 (69%) of the 61 residents. Of the 42 residents who consented, 32 completed all 3 questionnaires. All 42 residents submitted a narrative reflection on their experience with the empathy suit and 31 residents submitted a narrative reflection based on their experience with a patient in clinic. 42.9% female and 57.1% male; 28.6% between 20-225 years of age, 59.5% between 26-30, 7.1% between 31-35, 2.4% +40 and 2.4% missing data.
English et al. 2023 [54]	Mixed-methods	Canada	Patients with a self-reported BMI > 30 kg/m² (n=28) recruited through Obesity Canada and obesity specialist physicians across Canada. 116 participants began the survey, with 61 participants completing both videos and surveys (52.6% completion rate). The non-completers had a higher BMI (44.35 vs 40.94, p=0.05) and were less likely to have been diagnosed with obesity (18.2% undiagnosed vs 1.6%, p < 0.002). Average age of the study participants was 49.43, ranging from 24 to 72. Average BMI of participants was 40.95, with almost one-half living with Class 3 obesity (45.8%), one third with Class 2 obesity (30.5%), and fewer with Class 1 (15.3%) obesity or overweight (8.5%). Almost half of participants (49.5%) reported that their healthcare provider rarely or never discusses weight loss, and almost two-thirds of participants (64%) reported feeling stigmatized by their healthcare provider because of their weight at least some of the time.
Gajewski et al. 2023 [55]	Mixed-method	USA	Undergraduate 1st year nursing students (n=121, 86% of the 140 invited students): There were 8 lab groups of 20 students. There were 70 students from the traditional cohort class and 51 from the accelerated second-degree (ASD) cohort class. Enrollment in the Health Assessment course in the programme's first semester was an inclusion criteria. Participants included 101 females (83%) and 20 males. Most study participants were in the 22 -27-year age group (64 %), followed by 28-30 years (12 %).
Hales et al. 2018 [56]	Qualitative study	New Zealand	HCP (n=7): healthcare staff who self-identified as regularly working with or caring for people with obesity: 6 registered nurses and 1 registered physiotherapist; all participants were of European descent and all but 1 were female;

			4 participants were in the healthy weight range for BMI, and 3 were in the range for overweight.
Fox et al. 2023 [57]	Qualitative study	USA	1st and 2nd year medical students (n=4): female (n=3), male (n=1); age range: 23-28 Community members (n=2): female (n=2); ages: 36, 54

1.2.2 Ergebnisse randomisierter Kontrollstudien

Tabelle A1-19: Wirksamkeitsergebnisse von randomisierten Kontrollstudien bei Gesundheitspersonal

Authors, year	Nickel et al. 2019 [31]	Welzel et al. 2021 [34]	Wijayatunga et al. 2021 [35]
Country	Germany	Germany	USA
Target population (n)	Six different groups (n=949: 457 vs 489): General population (159 from public places), patients with obesity (82 obesity outpatient clinics), nurses in training (202 nursing schools), medical students (208 during medical lectures at the University of Heidelberg), certified nurses and physicians (150 and 148 from congresses, training courses, and in hospitals).	Primary care practices (n=50, 25 vs 25) Patients with overweight/ obesity (n=135, 65 vs 70)	Registered dietitians: Intervention (n=47) Control 1 (positive control, n=47) Control 2 (negative control, n=53)
Intervention(s)			
- Description	A two-and-a-half-minute animated video (produced with BGoAnimate, San Mateo, USA) before answering the questionnaires (physician informs a patient with obesity about potential risks, side effects, and possible treatments for obesity).	5A online tutorial which offers education on weight counseling according to the "5As of Obesity Management" by the Canadian Obesity Network. GPs received continuous access to the 5A online tutorial. They were asked to complete the tutorial within 2 months after receiving login data. The 5A online tutorial comprises an introduction, 5 knowledge sections and a short knowledge quiz at the end. While the introduction includes information on learning objectives and basic principles of obesity management, each of the five knowledge sections covers one of the 5A components: "ASK": Discuss weight and motivation with the patient. "ASSESS": Assess health status and obesity class, comorbidities and causes of weight gain.	Participants watched either interventional video (20 min), positive control, or negative control video. The Intervention and Control 1 videos were created by the researchers specifically for this study. Intervention informative video: uncontrollable causes of obesity, such as genetics, uncontrollable causes of weight regain after loss, a script-based role-play activity that demonstrates the negative effects of a communication style that was clearly influenced by weight bias.

		<p>“ADVISE” section contains information on obesity-related treatment options (physical exercise, nutrition, psychotherapy, medication and surgery).</p> <p>“AGREE” on health outcomes, weight loss expectations and treatment plan.</p> <p>“ASSIST” the patient in the continuous process of weight management and arrange follow-up visits.</p> <p>The short quiz at the end of the 5A online tutorial consists of 7 questions :e.g. “How would you react if a patient told you that he or she doesn’t want to talk about his or her weight?”.</p>	
- Underlying theory	NR	5As model	Attribution Theory
- Setting	Heidelberg and Baden-Baden, Germany	Primary care setting in the region of central Germany	NR
Control intervention	Same as the intervention - difference between the different groups; Patients with obesity were only considered as a control group.	General practitioners (GP) allocated to the control group followed the care-as-usual protocol, receiving access to the 5A intervention only 6 months after the trial was completed. Patients whose attending GP was aligned to the CG received treatment as usual (TAU).	Control 1 video: controllable causes of obesity, such as diet and exercise, and its consequences on health, evidence-based tools that can be implemented in dietitian’s practice to help patients plan their weight loss. Control 2 video: emphasis the role of dietitians in society, different career options available for them. The video was also created by the researchers using a combination of publicly available promotional video clips obtained from the Academy of Nutrition and Dietetics EatRightProTV YouTube channel (https://www.youtube.com/user/EatRightProTV/videos).
Outcomes			
- Description	Weight bias	<p>Primary: Corresponding to the 5A framework, provider-patient interaction regarding the management of obesity</p> <p>Secondary: patients' health-related quality of life, depressive symptoms, internalised weight bias, anxiety symptoms, personality traits and counseling experiences of patients²</p>	<p>Primary: change in the “blame” component of explicit bias</p> <p>Secondary: changes in other components of explicit bias (physical and social) and implicit bias</p>

² Other outcomes, including “weight status”, “weight loss intentions” and “activities of weight management” were not extracted, as they were not relevant for the aim of this report.

<p>- Measurement tools</p>	<p>Fat phobia scale (FPS)</p>	<ul style="list-style-type: none"> ■ German version of the Patient Assessment of Chronic Illness Care (PACIC 5A): Patients' perspective on the provider-patient-interaction over the past 6 months ■ German version of the EQ-5D-5L ■ German version of the Patient Health Questionnaire (PHQ-9) ■ German adaptation of the Weight Bias Internalization Scale (WBIS) ■ Subscales for 'panic syndrome' and 'other anxiety syndrome' of the PHQ-D to assess anxiety ■ 10-item Big Five Inventory (BFI-10) ■ German adaptation of the short form of the Fat Phobia Scale (FPS) 	<ul style="list-style-type: none"> ■ Anti-Fat Attitude Test (AFAT) ■ Weight-related implicit association test (IAT)
<p>- Measurement time points</p>	<p>Directly after watching the videos.</p>	<p>GPs of both groups were asked to fill out questionnaires following recruitment (baseline, BL) and at 12-month follow-up. Patients of both treatment groups were assessed at the time of recruitment (BL), as well as 6 months (FU1, follow-up one) and 12 months (FU2, follow-up two) after BL using comprehensive questionnaires.</p>	<p>On day 1, the survey contained the following material: (1) pre-intervention questionnaire; (2) educational video; and (3) immediate post-intervention questionnaire. Final data collection time point was 1-month later.</p>
<p>Effectiveness of interventions to reduce weight stigma</p>			
<p>- Among HCP and trainees</p>	<p>No significant differences in the FPS between the control and the intervention group (mean 3.5, SD 0.6 vs 3.5, SD 0.6, $p = 0.108$) and between the control and intervention groups of the individual subgroups: General population: 3.6, SD 0.5 vs 3.6, SD 0.4, $p=0.692$ Nurses: 3.3, SD 0.7 vs 3.3, SD 0.7, $p=0.754$ Nurses in training: 3.4, SD 0.6 vs 3.4, SD 0.6, $p=0.749$ Medical students: 3.7, SD 0.5 vs 3.6, SD 0.5, $p=0.267$ Physicians: 3.5, SD 0.5 vs 3.5, SD 0.5, $p=0.309$</p> <p>There were significant differences between the different subgroups in the control group with the lowest FPS in patients with obesity (3.2, SD 0.7) and the highest FPS in the general population (3.6,</p>	<p>With respect to the 5A online tutorial (relevance of its knowledge contents and usability within the primary care setting), 63.2% ($n=12$) of the GPs in the intervention agreed with the statement that the tutorial comprised exactly the issues which are relevant for obesity treatment and counseling, while 26.3% ($n=5$) disagreed and 5.3% ($n=1$) neither agreed nor disagreed. Regarding the statement that the 5A online tutorial is a useful addition for an optimised treatment of obesity, 57.9% ($n=11$) agreed, 26.3% ($n=5$) disagreed and 5.3% ($n=1$) neither agreed nor disagreed. Similarly, 63.2% ($n=12$) agreed that the 5A online tutorial can help treatment providers to start a conversation about weight with patients with obesity, while 26.3% ($n=5$) disagreed and 5.3% ($n=1$) neither agreed nor disagreed.</p>	<p>No statistical difference on explicit or implicit weight-bias after receiving the intervention video: AFAT-blame score: intervention group -0.05 points between pre- and immediate post-intervention, not statistically significant ($p = 0.76$, CI = -0.40, 0.30), +0.04 and +0.07 in control 1 and control 2 group, respectively, not statistically significant ($p = 0.86$, CI = -0.40, 0.47 and $p = 0.51$, CI = -0.15, 0.29). The difference in average AFAT-blame score changes between pre- and immediate post-intervention of control 1 and control 2 groups compared to intervention group were not significantly different ($p = 0.75$, CI = -0.49, 0.66 and $p = 0.54$, CI = -0.28, 0.53). AFAT-social score: intervention group +0.04 points, not statistically significant ($p = 0.72$, CI = -0.20, 0.28), +0.19 and +0.10 in control 1 and control 2 group, not statistically significant ($p = 0.10$, CI = -0.05, 0.42 and $p = 0.15$, CI = -0.04, 0.24). The difference in average AFAT-</p>

	<p>SD 0.4) and medical students (3.6, SD 0.5, $p < 0.001$). There were also significant differences between the different subgroups of the intervention group, with the lowest FPS among nurses (3.3, SD 0.7) and the highest FPS among medical students (3.7, SD 0.5, $p < 0.001$).</p> <p>Participants with obesity found patients with obesity to be more diligent (2.7, SD 0.9 vs. 3.5, SD 0.6) and more attractive (3.1, SD 1.0 vs. 3.8, SD 0.7) compared to medical students ($p < 0.001$ for comparison between subgroups).</p> <p>Some of the subgroups with intervention by video teaching rated the burden of obesity higher than the respective control groups. This shows the existing need for more information and education on obesity in both the general population and in medical professions.</p>		<p>social score changes between pre- and immediate post-intervention of control 1 and control 2 groups compared to intervention group were not significantly different ($p = 0.39$, CI = -0.22, 0.51 and $p = 0.67$, CI = -0.23, 0.35).</p> <p>AFAT-physical score: intervention group -0.01 points, not statistically significant ($p = 0.97$, CI = -0.44, 0.42), +0.05 and +0.02 in control 1 and control 2 group, not statistically significant ($p = 0.81$, CI = -0.39, 0.49 and $p = 0.87$, CI = -0.18, 0.21). The difference in average AFAT-social score changes between pre- and immediate post-intervention of control 1 and control 2 groups compared to intervention group were not significantly different ($p = 0.84$, CI = -0.54, 0.65 and $p = 0.91$, CI = -0.43, 0.47).</p> <p>IAT score went down by 0.02 units in the intervention group in the unadjusted analysis, not statistically significant ($p = 0.93$, CI = -0.56, 0.51). Average changes in the IAT score were not statistically significant in the control 1 and control 2 groups ($p = 0.07$, CI = -0.06, 1.08 and $p = 0.15$, CI = -0.10, 0.62, respectively). Furthermore, they were higher (+0.54 and +0.29) than the intervention group but not significantly different ($p = 0.16$, CI = -0.23, 1.30 and, $p = 0.37$, CI = -0.35, 0.93).</p> <p>A short, attribution theory-based intervention may not be sufficient to reduce weight bias in practicing registered dietitians.</p> <p>The analysis for 1-month follow-up changes in weight bias is not presented because of high attrition rates.</p>
<p>- Among students in the field of HC</p>		<p>NR</p>	<p>NR</p>
<p>- Among patients</p>		<p>PACIC 5A sum score: no significant group differences at 6-month and 12-month follow-up: Baseline: mean 58.0 (95% CI 52.3–63.7) vs 56.3 (50.7–62.0) 6-months: 60.5 (53.8–67.2) vs 54.9 (49.2–60.7), $p=0.0509$ 12-months: 59.0 (52.7–65.2) vs 52.5 (46.7–58.4), $p=0.295$</p> <p>No significant group differences for any of the secondary outcomes with the exception of the WBIS [3.29 (2.96–3.61) vs 3.88 (3.57–4.20), $p < .01$] at 6-month follow-up. Adjusted for the</p>	<p>NR</p>

		scores at baseline and further covariates, participants of the intervention scored on average 0.5 points (p=0.004) lower on the WBIS than participants of the control. Adjusted mean differences did not significantly differ at 12-months follow-up.	
Conflict of interests and funding	CoI: None Funding: NR	CoI: None Funding: Open Access funding enabled and organized by Projekt DEAL. This work was supported by the Federal Ministry of Education and Research (BMBF), Germany, FKZ: 01EO1501. The funder had no role in the design of the study, nor in preparation, review, and approval of the manuscript. The funder will have no role in the collection, management, analysis, and interpretation of the data.	CoI: None Funding: NR

Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

Tabelle A1-20: Wirksamkeitsergebnisse von randomisierten Kontrollstudien bei Student*innen im Gesundheitsbereich

Authors, year	Matharu et al. 2014 [28]	Cohen et al. 2019 [30]	Fitterman-Harris et al. 2021 [32]	Oliver et al. 2021 [33]	Joseph et al. 2023 [37]
Country	USA	USA	USA	USA	USA
Target population (n)	Medical students (n=129: 63 vs 66)	Physicians-trainees (n=119: 41 vs 38 vs 40)	1st year medical students (n=101): Intervention (n=48 - 7 groups) Control (n=53 - 4 groups)	13 medical-surgical clinical practicum groups, consisting of 6-8 3rd year undergraduate nursing students (n=103)	Nursing students (n=189: 80 vs 109)
Intervention(s)					
- Description	1h dramatic reading of “The Most Massive Woman Wins”. The script was 10 pages long and incorporated the narratives of women from different walks of life and how they came to understand their weight in the context of social discrimination. This included being made fun of as a child by family and friends, abusive relationships	1 article emphasieed the genetic causes of overweight, another emphasised the behavioral causes of overweight. After reading the article, physician trainees entered an immersive virtual reality (VR) clinical environment, where they first introduced themselves, then listened to a digital, virtual patient with obesity	Multifaceted intervention designed to reduce weight bias via the central route of processing. The application of this one-time intervention was designed to (a) educate participants about the causes and controllability of overweight and obesity, (b) weaken previously held stereotypes about patients with obesity, (c) evoke empathy and (d) create cognitive dissonance = Behavioural Medicine and Health course. The	Weight bias reduction (WBR) education was part of the practicum curriculum. The intervention groups were given a more intensive intervention which included the addition of disclosure of individual scores and feedback from the questionnaires that measured attitudes and beliefs about individuals with obesity, case-based learning via critical thinking modules and a more	Loving kindness meditation (LKM): a 10-min guided meditation recorded by the first author. The script for the LKM was adapted from Kristin Neff’s loving kindness meditation (2020) and adjusted to match the methodology of Stell and Farsides (2016). Participants were directed to repeat loving kindness phrases (e.g., “May

	<p>and inability to find jobs despite adequate qualifications and training. After the reading, all students present discussed the play among themselves, with minimal nondirective facilitation by the study coordinators.</p>	<p>deliver an account of her chief complaints: knee pain, shortness of breath, and a hand rash. Physician trainees were instructed to then verbally counsel the virtual patient as they deemed appropriate.</p>	<p>intervention was administered in a small group format with approximately 12–13 participants per group. One-session curriculum-based education (75 min) based on the central route of the ELM.</p> <p>1) Controllability: a shortened version (five questions) of the quiz. In the intervention, participants were asked to express their reactions once the correct answers were revealed to encourage them to thoroughly contemplate the information provided, increasing the possibility that participants would experience a shift in attitude via the central route of processing.</p> <p>2) Breaking stereotypes: treatment case examples that included a presenting problem and the patient's biological sex, age and BMI. Participants were asked to provide the potential cause of the presenting issue and appropriate patient feedback. It was anticipated that weight, among other things, would be suggested as a potential cause of the issue. Additional information was then provided (such as the patient has lost 50 pounds in the last 6 months) and the group was asked if and how this new information changed their evaluation of the presenting problem.</p> <p>3) Evoking empathy: a 17-minute video titled 'Stigma – The Human Cost of Obesity' with educational information and personal accounts of weight bias from individuals with obesity. Afterwards, the group leader posed questions adapted from the Rudd Center's video</p>	<p>robust reflective journaling component (WBR-I). In addition to the WBR module, each clinical group received a total of 2 additional h of case-based, critical thinking modules at 2 separate time points during the semester. These 2 additional h-long case-based learning modules were incorporated into the groups' clinical post-conference sessions and occurred at clinical hospital sites with discussions led by the research team. Students also received personalised feedback on their individual baseline ATOP and BAOP scores and their interpretation and information about their group's mean ATOP and BAOP scores. The research team believed that acknowledgment of the scores would be a valuable tool in self-education and increase one's conscious awareness of personal biases throughout the WBR programme.</p> <p>In addition, case-based learning scenarios to engage students in critical thinking regarding patients in the clinical setting. The two 1-h case-based learning modules occurred during weeks 7 and 10 of the semester, during which the research team joined each WBR-I group at their clinical practicum sites to provide case-based learning scenarios during post-conference sessions. WBR-I students were provided the case-study scenario, worked in pairs through the case scenario, and</p>	<p>you have health,” “May you be happy,” “May you be well.”) to themselves, someone they care deeply for, and someone they have neutral feelings towards. In the final round of loving kindness phrases, participants were instructed to open their eyes. They were presented with a photograph of a woman with higher weight and then prompted to direct loving kindness phrases to this person (e.g., health, happiness, wellness).</p> <p>Several methods were utilised to confirm that participants engaged in the meditations. First, participants were not shown the “Next” button until adequate time had passed for them to listen to the meditation. Additionally, participants were screened out of the meditation if they spent more than 20 minutes on the meditation page. They were asked to list at least one loving kindness phrase they repeated (i.e., LKM condition).</p>
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			<p>discussion guide to encourage thoughtful consideration of the film's content.</p> <p>4) Cognitive dissonance: a scenario involving weight bias and asked to practice addressing the bias presented in the scenario. Afterward, the group reconvened to discuss how challenging weight bias can benefit participants' medical practice and be more broadly beneficial.</p>	<p>engaged in dialogue to consider how to reduce bias in patient care. After obtaining follow-up data, debriefing sessions were held for all intervention and control groups to discuss challenges related to weight bias that the students experienced over the semester. In addition, the debriefing allowed students to discuss how their attitudes or beliefs towards individuals living with obesity and obesity as a disease may have changed over the semester.</p>	
<p>- Underlying theory</p>	<p>NR</p>	<p>NR</p>	<p>Elaboration likelihood model (ELM): posits that there are two routes to attitude change – central and peripheral. Attitude change via the central route is achieved through an individual's extensive consideration of the message presented and occurs when motivation and ability are high. On the other hand, attitude change via the peripheral route occurs when motivation or the ability to process the message is low. The peripheral route is characterised by minimal cognitive effort. Attitudes are shaped by cues such as perceived source credibility and the recipient's mood. Change via the central route is persistent and predictive of future behaviour while shifts in attitude resulting from the peripheral route are transient and less predictive of subsequent behaviour. 4 main strategies: controllability, breaking stereotypes, evoking empathy, cognitive dissonance.</p>	<p>NR</p>	<p>NR</p>

<p>- Setting</p>	<p>3 medical schools over a period of 4 months: University of California, Davis, School of Medicine; University of California, Irvine, School of Medicine; and Mayo Medical School, Rochester, Minnesota.</p>	<p>Washington DC, metropolitan area</p>	<p>Midsized, private university in the Midwest</p>	<p>Single academic institution</p>	<p>NR</p>
<p>Control intervention</p>	<p>1h lecture on the medical management of obesity. The lecture contained information distilled from www.obesity.org, the official website for the Obesity Society. PowerPoint presentation supplemented with extensive notes, including statements that obese persons often experienced bias from society and health professionals, and that such bias is counterproductive to effective treatment. The lecture also noted the importance of actively involving the patient in treatment by soliciting the patient's motivation for and past efforts at weight loss.</p>	<p>A third article served as the control article and relayed information pertaining only to chronic headache pain.</p>	<p>The control groups were slightly larger with approximately 22 participants per group. One-session curriculum-based education (75 min) based on the peripheral route of the ELM (using an education-only model). The participants in the control group completed a 19-item quiz to gauge their knowledge of the causes and controllability of obesity. Afterward, the group leaders proceeded with an educational PowerPoint presentation, which included the correct answers to the quiz. The presentation then described the types (explicit and implicit) and components (prejudice, stereotyping and discrimination) of weight bias, as well as the prevalence and how weight bias is evidenced in different settings (i.e., employment, education and healthcare), implications of weight bias for healthcare professionals (e.g., less empathetic communication with patients) and for recipients of weight bias (e.g., healthcare avoidance; depression), ways physicians and medical students can reduce weight bias in their practice (e.g., rule out other potential causes before concluding a medical concern is explained by obesity) and how they can talk</p>	<p>The control group received a standard weight bias reduction (WBR) programme: The module consisted of a one-time, 1h slide presentation with information about the prevalence of obesity, genetic influences related to obesity, the presence and negative impact of weight bias within healthcare, and finally, the steps HCP can take to reduce weight bias in their clinical practice. All participants watched the Weight Bias in Healthcare video and engaged in a dialogue adapted from the video discussion guide. Afterwards, participants individually submitted five reflective journaling responses over the course of the 14-week semester related to weight bias through a secure learning management system and received individual feedback from the research team.</p>	<p>Body scan meditation: 10-min body scan guided meditation that was adapted from an online audio-recording (Yvonne, 2016). Participants were directed to scan their bodies, starting at their toes and moving to the crown of their heads. They were directed to notice specific parts of their body as they sit in a chair. To keep this condition as similar as possible to the intervention condition, participants were instructed to open their eyes at the end of the body scan meditation. They were presented with a photograph of a woman with a higher weight and then prompted to pay attention to the physical features of the woman's face. They were asked to describe the place in their body where they noticed the most tension (i.e., body scan control condition). Finally, all participants were asked an open-ended question about how they felt in their bodies following the meditation.</p>

about weight with patients (e.g., ask permission to discuss a patient's weight).

Outcomes					
- Description	Implicit bias, explicit bias and physician empathy	Clinical communication variables and interpersonal communication	Weight bias	Explicit weight bias	Weight bias, positive emotions, attitudes towards "obesity", internalisation of the thin ideal
- Measurement tools	<ul style="list-style-type: none"> ■ Obesity-specific implicit association test (IAT) ■ Antifat attitudes questionnaire (AAQ) ■ The Jefferson Scale of Physician Empathy (JSPE) 	<p>Clinical communication variables:</p> <p>Communication length: Measured in seconds from the time the physician trainee first began verbally addressing the virtual patient.</p> <p>Weight mentioned: Any instance in which the participant mentioned body weight to the virtual patient during the course of the interaction.</p> <p>Responsiveness to patient information needs: offered participants an opening to address the patient's unmet information needs about her previous diagnosis. This item was thus operationalised as any instance in which the physician trainee defined or offered a description of osteoarthritis.</p> <p>Lifestyle counseling: Operationalised as any instance, during the interaction, in which the physician trainee counseled or otherwise indicated a desire to directly counsel or follow-up about the patient's</p>	<ul style="list-style-type: none"> ■ Weight Implicit Association Test (IAT) ■ Anti-fat attitudes test (AFAT) ■ Universal Measure of Bias Fat (UMB-FAT) ■ Toronto Empathy Questionnaire (TEQ) ■ Balanced inventory of desirable responding short form-16 (BIDR-16) 	<ul style="list-style-type: none"> ■ Attitudes Towards Obese Persons scale (ATOP) ■ Beliefs About Obese Persons scale (BAOP) 	<ul style="list-style-type: none"> ■ Modified Differential Emotions Scale (mDES)

	<ul style="list-style-type: none"> 2 open-ended questions: One question asked students to discuss whether they viewed obesity as a civil rights issue or a medical/public health issue. For question 1, we identified four categories: Civil rights/ discrimination issue; public health/medical issue; both; and no response. The second question asked students to formulate a treatment plan for an overweight but otherwise healthy older woman. For question 2, we coded student responses as primarily prescriptive (doctor-centered with reliance on standard recommendations); primarily patient-centered (with inquiry into patient preferences and reliance on tailored treatment); and no response. 	<p>diet and/ or physical activity.</p> <p>Interpersonal communication outcome variables: Lifestyle assumptions: the physician trainee appeared to assume that the patient engaged in sub-optimal exercise and dietary behaviour. Stigmatising language: use of stigmatising words in their communication with the virtual patient.</p>			
<p>- Measurement time points</p>	<p>Pre- and post-activity survey with postintervention follow-up of four months.</p>	<p>NR</p>	<p>3 time points occurring over the course of approximately 1 week: baseline, intervention and post-intervention. Although follow-ups were planned 9 days and 4 weeks post-intervention, they were dropped due to lack of participation, even though participation incentives were offered.</p>	<p>Baseline data were collected on the first day of the medical-surgical nursing clinical experience, and follow-up data were collected after the 14-week clinical was completed.</p>	<p>Post-intervention-only measures: after completion of the meditation.</p>
<p>Effectiveness of interventions to reduce weight stigma</p>					

- Among HCP and trainees	NR	NR	NR	NR	NR
- Among students in the field of HC	<p>IAT: no statistical difference with intervention for implicit bias (change in experimental group minus change in control group [SEM], -0.04, $p > 0.05$).</p> <p>AAQ: Those who participated in the dramatic reading had decreased explicit bias compared with the lecture group (SEM, -5.5 points; $p = 0.01$). The paired t-test corroborated a highly significant difference in pre- and postintervention values of explicit fat bias in the theater group ($p = 0.002$) but not for those in the lecture group ($p = 0.61$). Encouragingly, students randomly assigned to read a play portraying obese characters had decreased explicit fat bias (5.5-point decrease on the 88-point scale, representing an effect size of more than one-third of a standard deviation) compared with students in the standard lecture group. Self-awareness of this injustice could have been incited among those in the theater group to decrease conscious bias.</p> <p>JSPE: There was a significant increase in empathy for those in both the theater (+ 2.7, SD 9.3, $p = 0.007$) and lecture group (+4.7, SD 13.4, $p =$</p>	<p>Communication length: no significant effects of condition on length of the clinical communication interaction (mean seconds genetic 162.41 vs behavioural 179.33 vs control 152.32). However, there was a significant interaction effect such that among physician trainees in the genetic condition, for every unit increase in BMI, interaction length decreased by 0.53 units on average. Weight mentioned: compared with physician trainees in the control condition, physician trainees in the genetic and behavioural conditions mentioned weight with greater frequency (87.8% vs 84.2% vs 45.0%): those in the behavioural condition had more than 5 times the odds ($p < 0.05$) and those in the genetic condition had more than 6 times the odds ($p < 0.01$) of mentioning weight than physician trainees in the control condition. Physician trainees' tendency to mention weight significantly increased as BMI increased among those in the control condition.</p> <p>Responsiveness to patient information needs: There were no significant effects of</p>	<p>The hypothesis that the intervention group would show a greater reduction in explicit and implicit bias compared with the control group indicated no statistically significant interaction between group and time on the Weight IAT ($p = 0.20$), AFAT ($p = 0.67$) or UMB-FAT ($p = 0.67$). These analyses were repeated without controlling for social desirability to assess potential differences in the pattern of results. Results showed main effects of time across groups in which scores of bias decreased for the following scales: Weight Control/Blame subscale of the AFAT ($p = 0.010$, $n = 101$); the Attraction subscale ($p = 0.029$, $n = 101$) and Equal Rights subscale ($p = 0.047$, $n = 101$) of the UMB-FAT; the UMB-FAT total score ($p = 0.034$, $n = 101$); and the Weight IAT ($p = 0.017$, $n = 94$).</p> <p>To assess whether levels of believed controllability of obesity were lower across both groups post-intervention compared with baseline, no significant difference in scores across time was identified ($p > 0.05$, $N = 101$).</p> <p>No significant interaction was detected when considering empathy, current BMI or highest BMI as a moderator of the relationship between intervention group and post-intervention scores on the AFAT, UMB-FAT and Weight IAT ($p > 0.05$). Biological sex was also assessed as a potential moderator post-hoc, although no</p>	<p>Pre-intervention ATOP scores ranged from 45–102 with a mean score of (WBR: 74.13 ± 8.36; WBR-I: 71.63 ± 7.30), and post-intervention ATOP scores ranged from 49 to 112 with a mean score of (WBR: 82.43 ± 7.77; WBR-I: 83.96 ± 9.05) with higher scores demonstrating a more positive attitude towards individuals with obesity. There were improvements in attitudes in both groups, but the attitudes about individuals with obesity based on ATOP Scale among those in the WBR-I treatment group compared with those in the WBR control group were not statistically significant ($p = 0.356$).</p> <p>Pre-intervention BAOP scores ranged from 4 to 40 with a mean score of (WBR: 19.97 ± 4.00; WBR-I: 17.94 ± 6.22), and postintervention BAOP scores ranged from 6 to 48 with a mean score of (WBR: 22.93 ± 2.80; WBR-I: 26.68 ± 7.85) with higher scores indicating a stronger belief that other factors may contribute towards obesity and that obesity was not under a person's control, statistically significant increase in beliefs about the controllability of obesity based on the BAOP Scale, $p = 0.001$.</p> <p>These findings suggest that weight-bias reduction designed to enhance critical thinking skills,</p>	<p>Statistically significant, positive correlation between self-compassion and positive attitudes towards people with "obesity" for participants in the intervention ($p < 0.01$) and control conditions ($p < 0.01$).</p> <p>A statistically significant effect of treatment was found for the Positive, Other-Regarding Emotions subscale of the mDES, $p < 0.001$, with greater levels of positive, other-regarding emotions for the intervention group (9.48, 3.41) compared to the control group (6.61, 3.92).</p> <p>Statistically significant effect of treatment was found on the Positive, Non-Other-Regarding Emotions subscale of the mDES, $p < 0.001$. The intervention group demonstrated significantly higher levels of positive, non-other-regarding emotions (14.83, 4.98) compared to the control group (6.61, 3.92).</p> <p>Statistically significant differences were not found between groups for weight bias (0.53, 0.43 vs 0.58, 0.41, $p = 0.36$), positive attitudes towards people with "obesity" (75.10, 15.38 vs 72.91, 17.85, $p = 0.38$). These insignificant results suggest that the one-time, 10-minute intervention was not robust</p>

	<p>0.02); theater, however, did not significantly increase empathy more than the control (SEM, +2.2; $p > 0.05$). The fact that the theater intervention did not improve empathy scores more than the lecture condition may be explained by the fact that both conditions stressed understanding the perspective of the overweight individual. Among women (but not men), there were significant intervention effects on the change in empathy at the end of study (mean: +5.1 points, SEM: 2.3, $p = 0.04$).</p> <p>There was no statistical difference with intervention for consideration of obesity as a civil rights issue.</p>	<p>condition on physician trainees' responsiveness to patient information needs (34.1% vs 31.6% vs 30.0%).</p> <p>Lifestyle counseling: Physicians in the genetic and behavioural conditions engaged in lifestyle counseling more frequently (65.9% vs 76.3% vs 45.0%): Those in the behavioural condition had more than 10 times the odds ($p < 0.01$), and those in the genetic condition had more than 3 times the odds ($p < 0.05$) of engaging in lifestyle counseling than those in the control condition.</p> <p>Lifestyle assumptions: Compared to physician trainees in the control condition, those in the behavioural condition made lifestyle assumptions more frequently (60.5% vs 25.0%): more than 5 times the odds ($p < 0.01$) of making lifestyle assumptions about the patient than those in the control condition. Those in the genetic condition, however, did not significantly differ from those in the control condition (46.3% vs 25.0%).</p> <p>Stigmatising language: Physician trainees in the behavioural condition used stigmatising language more frequently than physician trainees in the control</p>	<p>differences were identified ($p > 0.05$, $n = 101$).</p>	<p>such as the use of case-based learning, may influence beliefs more strongly than attitudes related to obesity.</p>	<p>enough to elicit significant differences in these outcome variables for participants in the intervention condition as compared to the control condition, particularly given the complexity and social acceptability of weight stigma.</p> <p>Post-hoc analysis: Both self-compassion ($p = 0.01$) and internalisation of the thin ideal ($p = 0.02$) predicted attitudes towards people with "obesity." According to these results, participants in the intervention condition with higher levels of self-compassion reported more positive attitudes towards people with "obesity." Additionally, participants in the intervention condition with lower levels of internalization of the thin ideal reported more positive attitudes towards people with "obesity."</p>
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		<p>condition (55.26% vs 15.0%): more than 4 times the odds ($p < 0.05$) of using stigmatising language than physician trainees in the control condition. Physician trainees in the genetic condition, on the other hand, did not significantly differ from those in the control condition (29.27% vs 15.0%).</p> <p>Overall, communications integrating information on genetic factors contributing to patient body weight and obesity risk may serve to reduce stigmatising communication with patients in addition to altering other attitudes, beliefs, and behaviours demonstrated in previous literature.</p>			
- Among patients	NR	NR	NR	NR	NR
Conflict of interests and funding	CoI: None Funding: Dean's Fund, University of California, Davis; Arnold P. Gold Foundation; National Center for Advancing Translational Sciences.	CoI: None Funding: NR	CoI: None Funding: NR	CoI: None Funding: NR	CoI: None Funding: Partial funding support was received through the College of Education Student Association (COESA) at the University of Denver for a student dissertation scholarship

Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

Tabelle A1-21: Wirksamkeitsergebnisse von randomisierten Kontrollstudien bei Patient*innen mit Übergewicht/Adipositas

Authors, year	Olson et al. 2018 [29]	Potts et al. 2022 [36]	Pearl et al. 2023 [38]
Country	USA	USA	USA

Target population (n)	Women with overweight or obesity (BMI ≥ 25 and < 35) who were interested in weight loss.	Patients with overweight/ obesity who experienced internalised weight bias (n=55: GSH-P n=17, GSH-E n=20, waiting list n=18).	Participants were 105 treatment-seeking men and women.
Intervention(s)			
- Description	<p>4-week Body Project intervention in combination with key components of weight loss treatment. Individuals assigned to Standard+Body Project received the Body Project, which consists of 4 weekly, in-person, group meetings lasting approximately 1h. The group leader completed a training video online and practiced delivering the intervention to confederates prior to initiating the study.</p>	<p>Participants assigned to GSH-P or GSH-E conditions were asked to read their assigned book "The Diet Trap" (Lillis et al. 2014) over the following 8 weeks. The Diet Trap is a self-help book that teaches a series of skills from ACT to reduce the harmful effects of weight self-stigma and develop more adaptive motivators for engaging in meaningful health and quality of life improving behaviours. The book teaches key ACT skills and concepts designed to increase psychological flexibility—the capacity to engage in meaningful actions while being mindful and accepting of whatever aversive internal experiences may arise (e.g., self-stigmatising thoughts and feelings). Each chapter includes journaling prompts to support applying ACT to oneself.</p> <p>GSH-E: weekly, templated email manually sent by the first author, which reminded them of the tasks and brief, tailored, supportive statement (e.g., It can be hard to be consistent with something like this. You've been doing great on that, well done!).</p> <p>GSH-P: same email prompts + weekly phone coaching sessions conducted by the first author, an advanced clinical/counseling psychology doctoral student, a 30-minute initial coaching session focused on increasing motivation and addressing potential barriers to engagement. The subsequent six weekly calls were 5 to 10 minutes long and focused on monitoring and reinforcing adherence, answering questions, problem solving non-adherence, and enhancing motivation. The final, 30-minute phone call in the eighth week focused on reviewing experiences in the programme and helping generalise skills and knowledge that were gained. The phone check-ins included personalised topics related to increasing motivation and generalising skills learned in the book to daily life (e.g., how participants can apply strategies from the</p>	<p>Behavioural weight loss with the Weight Bias Internalisation and Stigma Programme: 90-min group meetings, led by a clinical psychologist, postdoctoral psychology fellow, or registered dietician. Each group included 8–12 participants. Participants received 20 weekly group sessions, followed by six monthly sessions and 3 every-other-month sessions (total of 29 sessions over 72 weeks).</p> <p>For the first 20 weeks of the intervention, participants were given the opportunity to meet with their group leader for up to 3 brief individual sessions if they did not lose at least 1% of their body weight in the first 4 weeks, reported difficulty controlling their eating, or described other challenges that prevented them from adhering to the programme, which could not be fully addressed during group sessions.</p> <p>This first month of treatment was used to introduce participants to core BWL skills (e.g., self-monitoring) and allow time for initial changes to lifestyle habits before introducing new content. Beginning at week 5, 60 min of the group sessions were dedicated to BWL content, and the remaining 30 min were devoted to the Weight BIAS Program (including psychoeducation about weight and weight stigma; challenging myths and cognitive distortions related to weight; identifying links between stigma-related thoughts, feelings, and behaviors; coping with instances of stigma; interpersonal effectiveness skills to ask others to stop stigmatising; boosting self-efficacy; reducing self-criticism; and increasing empowerment, self-compassion, body esteem, and self-acceptance, Participants learned how weight stigma may impact health behaviors relevant to weight management, with a focus on overcoming stigma-related barriers to physical activity).</p>

		book to address current challenges, discussing concepts participants were learning from the book).	
- Underlying theory	NR	Acceptance and commitment therapy (ACT)	NR
- Setting	NR	Online	Participants were under the care of GPs.
Control intervention	Active control condition focused only on weight loss recommendations. Participants in the standard condition had no additional contact with intervention staff between the baseline and follow-up assessment.	Participants assigned to the waitlist condition were asked to simply wait 8 weeks before completing the next survey.	Standard BWL: Participants were recommended to consume 1,200–1,500 calories per day if their weight was <250 lb or 1,500–1,800 calories per day if their weight was ≥250 lb. Participants were instructed to eat a balanced diet and record the calories of all foods and beverages consumed. In the initial weekly meetings, sessions focused on topics such as self-monitoring, nutrition, portion sizes, stimulus control, goal setting, social support, and stress management. Monthly and every-other-month group sessions addressed topics related to maintaining weight loss and preventing relapse. Participants were also instructed to work toward a physical activity goal of ≥150 min per week by week 20 and >250 min per week by week 72. Participants were encouraged to engage in structured physical activity for a minimum of 10 min bouts across at least 5 days per week, with an emphasis on moderate intensity exercises (e.g., brisk walking). This first month of treatment was used to introduce participants to core BWL skills (e.g., self-monitoring) and allow time for initial changes to lifestyle habits before introducing new content. Beginning at Week 5, 60 min of the group sessions were dedicated to BWL content, and the remaining 30 min were devoted to engaging in a recipe exchange that included discussion of healthy recipes and food preparation tips.
Outcomes			
- Description	Internalised weight bias and body appreciation	Internalised weight bias, acceptance and action for weight-related difficulties ³	Internalised weight bias ⁴
- Measurement tools	<ul style="list-style-type: none"> ■ Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) ■ Body Shape Questionnaire (BSQ) ■ Body Appreciation Scale (BAS) ■ Weight Bias Internalization Scale (WBIS) 	<ul style="list-style-type: none"> ■ Weight Self-Stigma Questionnaire (WSSQ) ■ Acceptance and Action Questionnaire for Weight-Related Difficulties (AAQW) 	<ul style="list-style-type: none"> ■ Weight Bias Internalisation score (WBIS) ■ Weight Self-Stigma Questionnaire (WSSQ) ■ Impact of Weight on Quality of Life Questionnaire-Lite (IWQOL-Lite) ■ Treatment acceptability

³ The outcomes “weight control strategies”, “eating disorders” and “physical activity” were not extracted, as they were not relevant for the aim of this report.

⁴ The primary outcome “percent weight change” and other outcomes such as “physical activity”, “cardiometabolic risk factors”, were also not extracted, because no relevance.

- Measurement time points	All participants completed a second assessment scheduled four weeks after the baseline assessment was completed.	All participants were asked to complete an online posttreatment self-report survey 8 weeks after baseline.	Prior to the evaluation, candidates completed the WBIS, Beck Depression Inventory–II, and the Weight and Lifestyle Inventory. Outcome assessment visits occurred at baseline/randomisation and Weeks 20, 46, and 72.
Effectiveness of interventions to reduce weight stigma			
- Among HCP and trainees	NR	NR	NR
- Among students in the field of HC	NR	NR	NR
- Among patients	<p>There was a time main effect for body dissatisfaction [mean change score 22.6 (SD 20.1) vs 16.27 (15.1), effect size 0.35 (95% CI–0.23 to 0.94); internalised weight bias [12.4 (20.5) vs (3.17 (22.5), 0.43 (-0.16 to 1.02)]; body appreciation [19.4 (22.1) vs 8.1 (11.62), 0.63 (0.03 to 1.23)] with both conditions experiencing reduced body dissatisfaction, weight bias, as well as increased body appreciation.</p> <p>The most compelling effects of the intervention were observed for body appreciation, which improved more in the Standard +Body Project group than the Standard group, despite both groups reporting increased body appreciation. This result is promising because body appreciation may serve as a buffer against the negative effects of body dissatisfaction on quality of life as well as weight-related behaviours.</p> <p>Across all other psychosocial variables, the interaction effects were not statistically significant. However, the magnitude of improvements on all outcomes was greater among Standard+Body Project participants than among Standard participants.</p>	<p>WSSQ: Significant, large effects were found at post treatment, with the GSH-P (pre mean 43.94, SD 6.36 vs post mean 32.42, SD 9.72, $p < 0.001$) and GSH-E (44.90, SD 5.87 vs 36.25, SD 10.03, $p < 0.001$) conditions both having lower weight self-stigma than waitlist (45.44, SD 9.59 vs 43.75, SD 10.56, $p > 0.05$): GSH-P vs waiting-list ($p < 0.01$), GSH-E vs waiting-list ($p < 0.05$).</p> <p>A significant time by condition interaction was found for AAQW psychological inflexibility with weight-related concerns. Post-hoc tests indicated large within-condition improvements in both the GSH-P (95.88, SD 14.68 vs 61.42, SD 16.22, $p < 0.001$) and GSH-E (94.45, SD 17.78 vs 67.92, SD 22.32, $p < 0.001$), with no change in the waitlist (95.06, SD 21.06 vs 91.00, SD 20.55, $p > 0.05$). At post treatment, both the GSH-P and GSH-E were significantly lower relative to waitlist ($p < 0.001$; $p < 0.01$).</p> <p>Overall, results provide preliminary evidence for the potential effectiveness of ACT guided self-help for reducing weight self-stigma and improving some health outcomes. ACT for weight self-stigma teaches individuals to respond more flexibly to self-stigmatising thoughts and feelings, so that these experiences are acknowledged simply for what they are in a compassionate, accepting way, without having a significant impact on one's actions. Although ACT guided self-help improved psychological inflexibility with weight-related concerns, it did not improve general psychological inflexibility.</p>	<p>Changes in WBIS scores did not differ significantly between groups, nor did odds of remission from high IWS. At week 72, 53.8% vs 49.1% of participants in the BWL + BIAS versus BWL group had remitted from having a WBIS score ≥ 4 ($p = 0.38$); mean difference in week 72 -0.21 (SE 0.20, $p = 0.30$); results were 46.2% vs 47.2% at week 46 ($p = 0.95$) and 48.1% vs 49.1% at week 20 ($p = 0.99$). Several factors may have contributed to comparable reductions IWS in the two conditions. First, the group treatment format in both conditions provided opportunities for peer support. Peer support has also been proposed as an intervention strategy for reducing self-stigma, with the potential to help stigmatised individuals feel less alone in their experiences and, through positive interactions with other members of their stigmatized group, challenge negative beliefs about the group and themselves.</p> <p>Reductions in WSSQ scores were significantly greater in the BWL + BIAS vs BWL group at week 46 (mean difference: -3.02, SE 1.53, $p = 0.05$) and trended toward significance at week 20 (mean difference -2.73, SE 1.53, $p = 0.07$) and week 72 (mean difference, -2.97, SE 1.56, $p = 0.06$). The subscales showed significantly greater reductions in fear of enacted stigma in the BWL + BIAS group at week 46 ($p = 0.046$) and small effect sizes for the same pattern in self-devaluation at week 20 ($p = 0.11, 0.30$) and week 72 ($p = .06, d = 0.24$). Changes in total quality of life scores did not differ significantly between groups (IWQOL-Lite score: week 20: $p = 0.22$; week 46: $p = 0.12$; week 72: $p = 0.15$), but subscales for physical function, self-esteem, and sexual life showed significantly greater improvements in the BWL + BIAS versus BWL group at Week 46 or 72.</p>

			Treatment acceptability: At Week 72 (n = 85), participants in the BWL + BIAS group, compared to BWL, reported learning more new things overall (6.5, SD 0.9 vs 5.6, SD 1.8, p = 0.008) and having greater changes in attitudes about themselves (5.9, SD 1.1 vs 4.9, SD 1.9, p = 0.008). Participants in the BWL + BIAS group also reported significantly greater learning and use of skills related to stigma than did participants in the BWL group (skills learned = 5.8, SD 1.0 vs 5.0, SD 1.6, p = 0.008; skills used = 3.8, SD 0.6 vs 3.3, SD 0.9, p = 0.001).
Conflict of interests and funding	NR	CoI: None Funding: This work was supported by the Utah State University Department of Psychology and a Graduate Research and Creative Opportunity (GRCO) award.	NR

Abkürzungen: BWL – Behavioural weight loss, COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

1.2.3 Ergebnisse nicht-randomisierter Kontrollstudien

*Tabelle A1-22: Wirksamkeitsergebnisse der nicht-randomisierten Kontrollstudien bei Gesundheitspersonal und Student*innen im Gesundheitsbereich*

Authors, year	Wijayatunga et al. 2019 [39]	Jones et al. 2021 [40]	Nestorowicz et al. 2021 [41]
Country	USA	Canada	USA
Target population (n)	Kinesiology undergraduate students typically in their 3rd or 4th year (n=76, drop-outs n=9): Intervention (n=33) Control (n=34)	Physiotherapists (n=27)	1st year medical students (n=45): Intervention: n=24 Control: n=21
Intervention(s)			

<p>- Description</p>	<p>Both intervention and control classes were taught different learning material using the same teaching method: a lecture on day 1, a video session and a group activity to discuss clinical scenarios and do reflective writing in the subsequent class day which was 2 days after the lecture.</p> <p>Intervention class about causes of obesity including the uncontrollable causes of obesity such as genetics and about weight bias and its negative effects during the 80 min lecture on day 1, 3 videos about complex nature of etiology of obesity to induce empathy for individuals with obesity. These included; clips from Part 1 -Weight of the Nation (https://www.youtube.com/watch?v=pEkCbqN4uo); "Why are thin people not fat? Part 1" (https://vimeo.com/188835636); and "Why are thin people not fat? Part 2" (https://vimeo.com/188837113).</p> <p>To evoke empathy, the students were asked to work in groups of four on a script-based role-play activity that demonstrated the negative effects of a communication style that was clearly influenced by weight bias. In the first script, the healthcare provider was influenced by weight bias, while in the second script the healthcare provider was not biased. The course is one of the major requirements for the Bachelors degree in Kinesiology.</p>	<p>A single component approach using an 8h interactive seminar was delivered over one day. The seminar consisted of didactic presentations by speakers who included clinicians and researchers with expertise in bariatrics (i.e. the science and medicine of obesity) or joint replacement. Specifically, the invited speakers were respected local opinion leaders within the orthopedic and bariatric clinical areas and included a dietician, surgeons, physiotherapists, occupational therapist, pharmacist and researchers. All speakers had clinical experience interacting with patients with obesity while many had taken formalized classes in obesity sensitivity, that is, showing respectful language when interacting with others. The educational seminar discussed the complex causes of obesity, including genetic, metabolic, surgical complications, and social factors in relation to surgery and rehabilitation of patients who were undergoing total joint replacements. Other elements of the seminar focused on ways in which physiotherapists could reduce weight bias and discrimination in their practice areas. Presentations included the use of images of individual living with obesity engaged in everyday activities and were obtained from the image banks of University of Alberta (2017) and the University of Connecticut Rudd Center for Food Policy and Obesity (2019). The seminar also addressed implicit derogatory language about patients with obesity, weight stigmatization and the use of adopting more respectful language such as the use of "people-first language" which is recommended by organizations such as the Obesity Action Coalition in the United States and Obesity Canada.</p>	<p>The intervention included guided viewing of works of art in a museum and interactive presentations by physicians with expertise in nutrition and obesity. The physician presentations provided information on causes of obesity and set the stage for normalisation/de-stigmatisation of patient care.</p> <p>As incentive to complete all parts of the study, students earned a transcript notation indicating completion of a non-credit "Visual Literacy Elective." During the three visits to the museum, students had time to socialise and enjoy snacks before the museum curator provided an introduction for each session; most time at the museum was spent in guided viewing of selected exhibits.</p> <p>The first classroom session in January 2019 was taught by a Family Medicine physician. As an introduction and to spark discussion, the physician showed the video from the UConn Rudd Center for Food Policy & Obesity (depicting negative reactions of healthcare providers toward obese patients and then demonstrating the positive changes needed to make patients feel more welcome and comfortable). The second classroom session was presented by a physician who had personal struggles with obesity and currently interacts with a wide range of patients with obesity issues. Topics presented included motivational interviewing, challenges when considering weight loss options, and guidelines for choosing bariatric surgery.</p>
<p>- Underlying theory</p>	<p>Attribution Theory</p>	<p>Conceptual framework guided by Farkas et al. (2003) and Grimshaw et al. (2001)</p>	<p>NR</p>
<p>- Setting</p>	<p>A large public university in the midsouth of the United States</p>	<p>Region of Alberta</p>	<p>Rutgers Robert Wood Johnson Medical School (RWJMS)</p>

Control intervention	The control group was taught content similar to a traditional kinesiology curriculum emphasising the controllable causes of obesity, such as diet and exercise, and its consequences on health. Clips from Part 3 of Weight of the Nation video (https://www.youtube.com/watch?v=BmcZRGWBdwQ) which focuses entirely on community changes in relation to both food landscape and physical environment which are related to the controllable causes of obesity. After the video, the control class also had a discussion within a group of four: a scenario that described an individual who is overweight and has started eating a heavy lunch with his new job without making any changes in physical activity. The aim of this control group activity was to reinforce the role of diet and exercise in weight management.	Physiotherapists that only submitted online surveys but did not participated in the day seminar.	The experimental group attended three educational sessions and later in the year participated in two lecture/discussion sessions facilitated by physicians.
Outcomes			
- Description	Weight bias	Weight bias attitudes	Weight bias
- Measurement tools	<ul style="list-style-type: none"> ■ Anti-Fat Attitude Test (AFAT) ■ Implicit Association Test (IAT) 	<ul style="list-style-type: none"> ■ Attitudes Toward Obese Persons (ATOP) scale ■ Beliefs about Obese Persons (BAOP) scale 	<ul style="list-style-type: none"> ■ Beliefs About Obese Persons scale (BAOP) ■ Attitudes Towards Obese Persons scale (ATOP) ■ Fat Phobia Scale (FPS) ■ Implicit Association Test (IAT) ■ 3 researcher-developed questions to rate comfort and knowledge about working with patients who are obese: Scored on Likert scale 1=strong disagreement/discomfort 5=strong agreement/comfort
- Measurement time points	3 data collection time points: pre-test, 1-5 days post-intervention and 1 month.	Pre-intervention and immediately after seminar data collection.	Interventional group: Complete surveys pre-intervention - intervention (museums visits) - intervention (clinician talks) - complete surveys 3 months post-intervention. Control group: Complete surveys pre-intervention - no activity - no activity - complete surveys 3 months post-intervention.
Effectiveness of interventions to reduce weight stigma			
- Among HCP and trainees	NR	Mean ATOP score for the online group was 72.6 (SD 15.3) with scores ranging from 30 to 120 (respondents had somewhat positive attitudes towards individuals with obesity).	NR

		<p>The pre-seminar mean ATOP scores was 71.3 (SD 19.4), while the post-seminar mean score was 63.6 (SD 15.9) (mean difference -7.8, 95% CI -1.2, -14.3; $p=0.02$). The effect size was -1.0 indicating a large change in a lower score after the education session. No group difference were seen between the online and the pre-seminar group ATOP scores ($p = 0.66$).</p> <p>The mean BAOP score for the online group was 19.4 ± 7.6 with scores ranging from 1 to 48 (respondents believed obesity was under the individual's control and they were less likely to believe that other factors contribute towards obesity). The pre-seminar BAOP score was 17.4 (SD 6.4) and increased to 22.3 (7.6) after the seminar (mean difference 4.6, 95%CI 7.0, 2.1; $p = 0.001$). The effect size of the BAOP was modest, 0.76 with the seminar group.</p> <p>The online BAOP score was not different from the pre-seminar group's score ($p = 0.19$). Beliefs improved (BAOP: 7.4 vs. 22.3), but attitudes towards people with obesity worsened (ATOP: 71.3 vs. 63.5)</p>	
<p>- Among students in the field of HC</p>	<p>The teaching intervention used in the present study successfully reduced weight blame component of explicit weight bias, immediately after the in-class teaching activities (post-intervention) and the reduction persisted even at 1-month follow-up. AFAT: Mean (SD) score for social, physical and blame AFAT subscales pre-intervention were 1.73 (0.45), 2.55 (0.65) and 2.76 (0.58), respectively. Pre-intervention scores for AFAT were not significantly different between the intervention and control groups ($p < 0.05$). Beliefs improved and remained significant at 4-week follow-up (AFAT-blame: 2.79 vs. 2.43 vs. 2.40; AFAT-physical: 2.59 vs. 2.63 vs. 2.53, AFAT-social: 1.72 vs. 1.77 vs. 1.76) in the intervention group compared to the control group (AFAT-blame: 2.71 vs 2.76 vs 2.67; AFAT-physical: 2.53 vs 2.62 vs 2.58; AFAT-social: 1.70 vs 1.82 vs 1.83). There was a statistically significant improvement in the intervention group for the</p>	<p>NR</p>	<p>All the students—those who participated in the study activities as well as those in the control group—demonstrated a decrease in bias over the time of the study, but the between group differences were not statistically significant:</p> <p>BAOP: interventional: pre mean 18.83 (SD 6.90) and post mean 20.46 0 (SD 4.99) vs control: pre 17.38 (6.03) and 29.91 (8.60), $p= 0.370$</p> <p>ATOP: 68.58 (14.46) and 74.83 (11.35) vs 69.33 (12.80) and 74.14 (18.21), $p=0.715$</p> <p>FPS: 3.58 (0.43) and 3.44 (0.44) vs 3.63 (0.38) and 3.38 (0.58), $p=0.552$</p> <p>IAT: -1.46 (1.18) and -1.21 (1.25) vs -1.30 (1.38) and -1.00 (1.48), $p=0.630$</p> <p>3 questions:</p> <p>1. I feel knowledgeable about factors that influence obesity (e.g., environment, diet, exercise, genetics): 4.38 (0.58) and 4.67 (0.48) vs 4.48 (0.51) and 4.57 (0.51), $p=0.445$</p>

	<p>AFAT-blame compared to the control group ($p < 0.001$) but not for AFAT-physical ($p=0.575$) or AFAT-social ($p=0.620$). Majority of the participants (64% or more) had high implicit weight bias with strong or moderate preference for thin individuals over individuals with obesity at the baseline in the present study. The present teaching intervention was not successful at causing any reduction of implicit weight bias even though it has been reported to occur following tutorials on uncontrollable causes of obesity.</p> <p>IAT: a significant time and group interaction ($p=0.036$) was observed for IAT scores with generalised linear model analysis between intervention group [0.55 (0.30 to 1.01) vs 0.91 (0.48 to 1.69)] and the control group [0.70 (0.37 to 1.34) 0.40 (0.22 to 0.74)]. Comparison of 1-month follow-up time point with post-intervention time point using generalised linear model analysis and the odds of reducing implicit weight bias was 1.66 (95% CI: 0.90–3.06) times higher in the intervention group but was not statistically significant ($p = 0.10$), while in the control group it was 0.57 (95% CI: 0.31–1.04) times lower but was not significant ($p = 0.07$). Curriculum which emphasise controllable causes of obesity reduced weight blame component of explicit weight bias in kinesiology major students both immediately and 1 month after an in-class activity. In contrast, learning only about diet and exercise interventions to treat obesity appears to increase implicit weight bias in kinesiology students.</p>		<p>2. I feel comfortable interacting with patients who are overweight or obese: 4.21 (0.72) and 4.54 (0.59) vs 4.38 (0.59) 4.52 (0.60), $p=0.666$</p> <p>3. I feel comfortable counseling overweight or obese patients about their weight: 3.00 (1.10) and 4.13 (0.61) vs 3.48 (0.87) 3.95 (0.59), $p= 0.120$</p> <p>A positive finding was that most of our study participants indicated decreased bias toward people with obesity over the course of the study, regardless of whether they participated in the study activities. This finding might be explained by the content of their 1st year medical school curriculum which included a course, Digestive Systems, Nutrition, and Metabolism, which addressed issues related to diet and obesity and included a required “culinary medicine” session where students discussed healthy and practical eating choices while participating in actual meal preparation with a certified dietitian. Another course, Patient Centered Medicine, discussed negative outcomes related to health disparities and detrimental effects of implicit and explicit bias, and provided opportunities for students to work with a diverse group of standardised patients.</p>
- Among patients	NR	NR	NR
Conflict of interests and funding	CoI: None Funding: NR	CoI: None Funding: This worked was support, in part by Alberta Innovates Health Solutions Partnership for Research and Innovations in the Health System.	CoI: None Funding: NR

Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

1.2.4

Ergebnisse der Vorher-Nachher-Studien

Tabelle A1-23: Wirksamkeitsergebnisse der Vorher-Nachher-Studien bei Medizinstudent*innen

Authors, year	Kushner et al. 2014 [42]	Geller et al. 2018 [46]	Renold et al. 2023 [50]	Trofymenko et al. 2024 [52]
Country	USA	USA	Switzerland	USA
Target population (n)	1st year medical students (n=127)	6 1st year medical students cohorts of approximately 120 students each (range: 108-119)	3rd and 4th year medical students (n=79)	1st year medical students (n=103)
Intervention(s)				
- Description	<p>Communication Skills unit: Standardised patients (SP) were utilised to help teach fundamental communication skills such as setting the stage, eliciting information, giving information and counseling for health promotion. All SPs participating in the Communication Skills unit were experienced SPs and received extensive training prior to the start of the unit which included; understanding the weekly student learning objectives, giving verbal feedback on students communication skills, facilitating group discussion regarding communication skills, patient affect and strategies in using case facts to role play the patient scenario. 6 short, loosely structured patient scenarios were created for role playing to provide a broad range of realistic physician-patient encounters:</p> <p>1 Patient has never thought about losing weight and doesn't consider herself having a weight problem. 2 Patient knows she has a weight problem, has tried losing weight on multiple occasions but finds it hard to manage long-term. 3 Patient had a bad experience in the past</p>	<p>Ethics seminar of 90 minutes within the required course "Obesity, Nutrition, and Behaviour Change" discussing personal experiences and weight bias norms, personal struggles, beliefs about the causes of obesity and video clips depicting negative weight bias in small groups led by a facilitator. Beginning: discussion own struggles with weight. Next: review and discussion survey data including IAT results and beliefs about causes of obesity. Next: watch and discussion of video clips from 2 episodes of the TV show House, each of which centers on a patient with obesity (1 adult male, 1 preteen girl). The episodes involve both senior physicians and residents. Next: discussion of particular ethics and professionalism themes depicted in the videos, e.g. disrespectful behaviour on the part of senior physicians and the tendency of residents and</p>	<p>A structured multi-dimensional 8-week semester course on obesity, including a gamification exercise with a bariatric weight suit (BWS). The educational course on obesity consisted of 8 course sessions with 2 interactive lectures (2 h each) on epidemiological, medical, physiological, and psychological aspects of obesity. The lecture series started with the presentation of epigenetic and environmental factors causing obesity and focused on aspects of stigmatisation and blaming of people with obesity. This was followed by presentations on obesity prevention, ethics, treatment options, preoperative bariatric assessment, as well as obesity in childhood. The course included a live surgery transmission of a laparoscopic Roux-en-Y gastric bypass procedure from the operating theater to the classroom with narration by the operating surgeon. Upcoming lectures covered the physiology of eating behaviour and physiological changes in post-bariatric patients. The psychological approach to patients with obesity and conservative treatment</p>	<p>An interactive web course using a case-based learning model was developed by the authors, who are both primary care and obesity medicine physicians. Both authors are diplomates of the American Board of Obesity Medicine. The learning objectives were to:</p> <ol style="list-style-type: none"> 1. Incorporate knowledge of prevalence of obesity in the United States into practice. 2. List two strategies to mitigate weight bias in clinical settings. 3. Utilise four motivational interviewing techniques in clinical settings. 4. Identify the steps of the 5As behavior change model and apply these to lifestyle counseling in a clinical scenario. <p>The course took approximately 1h to complete and was hosted on the university's continuing medical education (CME) website (https://www.vlh.com/, accessed on 28 March 2022). The course was a mandatory independent learning module for the first-year medical students and was also available to providers both inside and outside the university for CME and maintenance of certification credit. The students were given one hour of curricular time to complete the module. The course introduced a fictional patient,</p>

with doctors that made her feel ashamed and humiliated.

4 Patient is hesitant to talk about her weight since it makes her feel bad. She does not like her body shape and size.

5 Patient did not know her weight was a medical problem and wants to learn how she can take control.

6 Patient comes from an obese family and assumes that it is all genetic and nothing will work.

Prior to the encounter, students were asked to read two short articles that were posted on the electronic blackboard that focused on communication issues about weight and obesity stigma. After a brief (15 minute) review of the articles with the faculty preceptor, students were instructed to discuss the SPs' perception of their weight, take a weight history and probe for how their weight has affected them socially and physically. Each student (in groups of 3 or 4) conducted an 8-minute encounter with the SP followed by 8 minutes debriefing in which the students received formative feedback on their communication skills. The feedback was provided by the SP and other students regarding their performance. The student who performed the interview first discussed what went well during the SP encounter. Afterwards, other students in the group offered their comments, followed by the SP.

After the SP encounter activity, students met once again with the faculty preceptor for an additional 30 minutes of facilitated reflection and discussion of the SP interaction.

fellows, disagreement among residents about the appropriateness of providing treatment to patients whom they think have personal responsibility for their health problems, tendency toward victim blaming among some characters in the video clips, questions about whether morbid obesity ought to be considered a disability, challenges physicians face when caring for patients they perceive as "difficult" because the patients' preferences for care differ from what the physician believes is in the patients' best interests.

An overall course evaluation is distributed every year. The last cohort was surveyed 4 months after the course to ascertain students' impressions of the different components of the ethics session and the impact each component had on their self-reported attitudes toward obesity.

options, such as lifestyle changes and pharmacological therapy, were also discussed. The last presentation covered aspects of shared decision-making and post-bariatric medical follow-up. During the semester, each medical student had to perform a gamification task with BWS in groups of three students, with the goal to experience different social situations in everyday life. The groups were asked to meet up in public during the semester. In each group, two students wore the BWS for at least 30 min, while a third student observed the public's reaction to them and took pictures and videos. Students took turns in both roles. The BWS weighs 7 kg and is designed to accommodate all body shapes.

Maria Chavez, a 42-year-old woman with knee pain and obesity and described her interactions at a clinic visit with medical personnel starting at intake and continuing throughout the visit with a physician. Through interactive questions with answer feedback, the learners were introduced to information on U.S. obesity trends, obesity bias in medical settings, and strategies to mitigate this bias. At Ms. Chavez's second visit, the learner became the "physician" in the scenario and was introduced to motivational interviewing (MI). Engagement was introduced as being the key step that sets the stage for the patient-physician interaction, involving asking open-ended questions, affirming positive aspects of patient statements, reflection, and summarising information. Focusing was introduced as involving a collaboration with the patient. Evoking was introduced as involving a process of exploring ambivalence. The course allowed the students to guide the patient in the scenario through evoking "change talk" (language that a patient or client might use that is an argument for change) and understanding the differences between "change talk" and "sustain talk" (language that is directed to maintain the status quo). Planning was introduced as the steps that are involved in helping patients develop a plan of action based on their goals. Finally, the learners were introduced to the 5 As behaviour change model originally developed by the U.S. Department of Health and Human Services in the context of smoking cessation. The course included nine embedded questions throughout the patient scenario to guide the students' understanding of implementing the 5As as well as correctly using MI techniques.

				<p>Patient Panel: On the same day as the required independent learning module, the students attended a required 1.5 h long online session via Zoom, which included a panel of patients undergoing current or prior treatment for obesity. Attendance for the patient panel was mandatory; the panelists were asked to comment on how they felt the diagnosis of obesity affected their healthcare experience. The panel consisted of three volunteers that were drawn from the authors' clinical practices. The following questions were asked to the panelists to begin the discussion:</p> <ol style="list-style-type: none"> 1. Do you feel your weight has been a factor in your interactions with the healthcare system and the kind of care that you have received? 2. Has weight affected your interactions outside of the healthcare system? <p>The closing of the discussion was marked by the panelists sharing how they believed their negative experiences with the healthcare system could have been improved.</p>
- Underlying theory	Contact theory	NR	NR	Motivational interviewing The 5As approach
- Setting	Northwestern University Feinberg School of Medicine (NUFSM) in Chicago	John Hopkins University	Medical Faculty of the University of Zurich, Switzerland	A college of medicine in the South-western U.S.
Outcomes				
- Description	Changes in students' attitudes and beliefs about obesity, and their confidence in communication skills	Weight bias	Medical Students' Attitudes towards Patients with Obesity	Effect on self-reported obesity bias

- Measurement tools	Newly constructed questionnaire (not validated): selected items from these surveys were chosen to create a new 16-item, 5-point Likert scale questionnaire ranging from strongly agree (5) to strongly disagree (1). For the scaled analysis we summed the questions into the 3 scale scores: Stereotyping (items 1, 2, 5, 6, 7, 8 and 9), Empathy for obese patients (items 10, 11 and 12), and Confidence in clinical interaction with obese patients (items 14, 15 and 16).	Implicit Association Test (IAT) Anonymous online survey (Yes/No Questions): Have you ever struggled with your weight? Have you ever sought help with weight control issues? Are any of your family members/close friends overweight?	Nutrition, Exercise and Weight Management (NEW) Attitudes Scale	Anti-Fat Attitudes Questionnaire (AFAT)
- Measurement time points	Survey 1 week before, immediately after and 1 year following the encounter.	In total: 6 years of data collection: Prior to the ethic session - online IAT. Following, students complete an anonymous online survey using the Blackboard platform in which they document their personal struggles with weight, their knowledge and beliefs about the causes of obesity and their IAT results.	Fill in the questionnaire 1–3 days prior to the start of the course and were asked to fill in the same questionnaire at the end of the semester course.	Immediately before and after completion of the online module
Effectiveness of interventions to reduce weight stigma				
- Among HCP and trainees	NR	NR	NR	NR
- Among students in the field of HC	Significant improvement between baseline and the immediate follow-up survey was observed in all three scales, ranging from small improvement in stereotyping and empathy, and a much larger mean improvement in confidence: Negative Obesity Stereotypes: 2.31 (SD 0.55) vs 2.18 (0.57) , p=0.002. Empathy for Obese Patients: 4.02 (0.54) vs 4.21 (0.57) , p<0.0001 Confidence in Clinical Interaction with Obese Patients: 2.41 (0.67) vs 3.61 (0.67) , p<0.0001.	IAT: across 6 cohorts, 70% preferred thin, 47% had struggled with weight loss, and the majority thought obesity was a disease (89%, range 85-92%), behavioural (89%, range 82-92%), or from poverty (90%, range 90-97%), primarily genetic (57%, range 51-62%), through ignorance (74%, range 70-79%) or lazyness (28%, range 21-38%). While there were some fluctuations across cohorts,	The 4 consecutive groups of students showed a remarkably stable score between 15 and 26 at both pre and post-course, but no significant change in the overall score pre- and post-course (pre-course: 19.59, SD 22.13 vs post-course: 24.21, SD 25.27, p = 0.24). The subscales also showed no statistically significant difference: Anti-fat: 15.32±19.6 18 [-62, 54] vs 21.58±21.28 22 [-29,66], p=0.62 Self-efficacy: 2.73±7.85 4 [-20, 20] vs 1.01±8.7 0 [-24, 22] , p= 0.2	The AFAT mean composite domain scores decreased significantly, indicating a decrease in explicit anti-obesity attitude bias after completing the online module. This decrease was present in all three domains: Fear (4.63, SD 2.24 vs 3.72, SD 2.60, p-value < 0.001), Dislike (1.25, SD 1.30 vs 0.88, SD 1.15, p-value < 0.001), Willpower (3.23, SD 1.90 vs 2.31, SD 1.87, p-value < 0.001)

	<p>Over 53% of students indicated less obesity stereotyping (vs 32.8% who indicated greater stereotyping) based on a declining score, 48.4% indicated more empathy for obese patients (vs 23.4% who indicated less), and 86.7% showed more confidence in clinical interaction with obese patients (vs only 7.8% whose confidence declined).</p> <p>At 1 year, negative obesity stereotyping had regressed to baseline levels and the modest decrease in stereotyping at the immediate follow-up survey had disappeared. However, gains were maintained for the mean empathy and counseling scale scores which remained statistically significant from baseline: Negative Obesity Stereotypes: 2.31 (SD 0.55) vs 2.29 (0.62), $p=0.87$. Empathy for Obese Patients: 4.02 (0.54) vs 4.15 (0.47), $p<0.001$. Confidence in Clinical Interaction with Obese Patients: 2.41 (0.67) vs 3.39 (0.66), $p<0.0001$.</p> <p>For the follow-up item, "The session had a long lasting influence on the way I think about obesity or an obese patient", 35% of students indicated "strongly agree or agree" while 33% indicated "strongly disagree/disagree". For the second follow up item, "The session had a long-lasting effect on my comfort level to talk with obese patients" 40% of students indicated "strongly agree or agree" while 25% indicated "strongly disagree or disagree" ($p < 0.05$ by chi-square test).</p>	<p>there were no strong trends.</p> <p>Online survey: across cohorts, 47% of students reported that they had at one time struggled with their weight (range, 43-54%), but only 12% had ever sought help with weight control issues (range, 10-15%). The majority of students (69%) reported that they had either family members or friends with obesity (range, 64-72%).</p>	<p>Beliefs about peers: 1.54 ± 0.69 2 [-2, 2] vs 1.62 ± 0.52 2 [0, 2], $p=0.47$</p> <p>The subgroup of medical students in their 4th year showed a significant improvement (Δ-score: +10, $p = 0.02$). Out of the 31 items, 9 items changed significantly following the multifaceted intervention when analysed separately. Among these 9 items, the following statements were the most relevant: (1) "I believe patients can maintain weight loss." ("agreement" pre-seminar 76% vs post-seminar 46.5%, $p=0.001$), (2) "overweight/obese individuals lack will power." ("agreement" pre-seminar 26.6% vs post-seminar 13.7%, $p=0.001$), and (3) "overweight individuals tend to be lazy about exercise." ("agreement" pre-seminar 51.9% vs post-seminar 35.6%, $p= 0.005$).</p> <p>The linear regression analysis revealed no correlation between the students' self-reported BMI and their NEW Attitudes Scale score ($p = 1$).</p>	
- Among patients	NR	NR	NR	NR

Conflict of interests and funding	CoI: None Funding: NR	CoI: None Funding: NR	CoI: Marco Bueter reports honoraria and consulting fees from Johnson & Johnson and Medtronic. The other authors have no conflict of interest to declare. Funding: The study was entirely funded by the University of Zurich, Switzerland.	CoI: None Funding: The online course was funded by a Banner University Medical Center-Tucson Campus Medical Staff Grant in 2017 in the amount of \$2500.
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Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

Tabelle A1-24: Wirksamkeitsergebnisse der Vorher-Nachher-Studien bei Krankenpflege-Student*innen

Authors, year	Molloy et al. 2016 [43]	Barra et al. 2018 [45]	Oliver et al. 2020 [48]	Oliver et al. 2024 [51]
Country	USA	USA	USA	USA
Target population (n)	1st semester nursing students in bariatric surgery (n=70)	Nursing students at the 3rd and 4th year level of undergraduate baccalaureate nursing education enrolled in medical surgical clinical practicum (n=103)	3rd year nursing students (n= 125)	Nursing students in their clinical year (n=19)
Intervention(s)				
- Description	4-semester bariatric sensitivity intervention (BSI) programme: The entire class viewed the 6 trigger films, participated in a debrief session facilitated by the project investigator, and completed surveys during regularly scheduled class time. Trigger films are short, social guidance educational films intended for student audiences and focus on themes that engage the affective domain. The trigger films, all less than 4 minutes long, presented simulated scenarios involving interactions among members of the health care team (usually occurring within earshot of an obese patient) and, in some cases, direct interactions with obese patients. All	Weekly obesity sensitivity training (15 weeks) as part of the clinical curriculum to increase awareness of weight bias within the public and HCP and to become cognisant of the detrimental effects weight discrimination has on the healthcare of obese patients. After completing the ATOPS, student's clinical groups reviewed BMI charts, explored issues related to obesity, and were exposed to a series of vignettes derived from current literature addressing historical and current obesity perspectives: Examples of vignettes included obese persons' large stature inhibiting them from utilising everyday items such as fitting into standard seats or standard doorways. Side by side comparisons of both obese and non-obese women were	Semester-long Curriculum Embedded Weight Sentitivity (CeWebs) training part of a 4-year prelicensure baccalaureate nursing programme. The project was a general sensitivity program related to patient care, rather than a program that focused on obesity. In this interdisciplinary training program, registered dietitians trained in weight management delivered the CeWebs intervention, which included a slide presentation on the prevalence of obesity, genetic influences related to obesity, the presence and negative impact of weight bias within health care, and the steps health care providers can take to reduce weight bias in their clinical practice. Additionally, a 17-minute video,	Educational session with simulation-based experiences (SBEs) with standardised participants (SPs) as part of the clinical curriculum. One 20-minute in-person SBE using SPs living with obesity (BMI ≥30) was developed following INACSL's Health Care Simulation Standards of Best Practice within the college's Simulation and Learning Resource Center (SLRC). The SBE reflected a routine primary care visit in an outpatient setting with the NP as the primary provider. As individuals who had personally experienced weight bias, four SPs collaborated in script development, and all four SPs were trained in a group setting before the SBE to establish standardisation. The script established the reason for the medical visit, which was weight gain, elevated HbA1c, and general concern for overall health. The patient verbalised frustration with past weight loss attempts and lack of connection to previous providers. The NP students were

scenarios were based on common nursing encounters and featured examples of nonprofessional nursing behaviour. Examples of scenarios included a loud and insensitive public discussion by 3 health care team members about a patient's need for bariatric-sized equipment and a nurse advising an obese patient to lose weight in a disrespectful and condescending manner. Key learning points built into the BSI included recognizing the multifactorial etiologies of obesity, avoiding "blaming the victim," and understanding the consequences of attributing the lack of personal willpower as the cause of all obese conditions. The lecture hall in which the BSI was delivered was preconfigured as follows: 70 chairs (1 per student) were arranged in 6 clusters to accommodate small discussion groups of 11 to 12 students. One hour of class time was allocated to delivery of the BSI as follows: introduction (5 minutes), trigger film viewing and small-group discussion (35 minutes), facilitated large group debrief, including presentation of small-group findings and guided discussion (15 minutes), and clarification of take-home message (5 minutes).

presented. Content addressed extra-large wheelchairs and theatre seats. Parallel MRIs comparing a healthy versus obese body provided a visual representation of how organs, muscles, and bones are affected. Student perceptions were sought regarding the following questions: (1) What causes obesity? (2) What are your opinions about obese people? and (3) If proper equipment was unavailable to prevent nurse injury or patient embarrassment, how would you handle being assigned to an obese patient? First set of vignettes addressed weight bias throughout history. Women of various weights were illustrated to showcase perceptions of female ideal weights, historically and in present-day society. Discussion of the vignettes centered on how beauty is indeed in the eye of the beholder and was designed to evoke intense opinions regarding obesity. The second set of vignettes centered on nurses' responses to obese patients, as well as obese patients' emotional responses to being stigmatized. Characteristics of obese patients were described as undisciplined and lazy, and that nurses preferred not to be assigned to render care or avoiding contact to prevent establishing a therapeutic relationship. Vignettes conveyed obese patient sentiments, encompassing rejection, embarrassment, disrespect, and designated the obese person as inconsequential. The third set of vignettes focused on how adverse effects from both HCP and obese patients directly correlated to patient wellbeing. Data included HCP

"Weight Bias in Healthcare," was used in the training (UConn Rudd Center for Food Policy and Obesity, 2017). After the slide and video presentation, the investigator engaged the students in a dialogue using five questions adapted from the video discussion guide. Sample questions included, "What are your current views toward patients with obesity?" and "Are you sensitive to the needs and concerns of individuals with obesity?" Students actively shared their reactions to the video and discussed the concept of weight bias in health care while responding to questions and prompts. Throughout the semester, the students also completed biweekly reflective journaling assignments discussing aspects related to obesity and patient care. At the end of the semester, the research team revisited the clinical groups to conclude the 14-week project and conduct the postintervention evaluation.

provided the patient's chart in a pre-briefing and were then expected to conduct a history, physical examination, and prescribe medical care corresponding with the presenting clinical needs of the patient. After the questionnaire completion, students participated in a structured debriefing session using the debriefing for meaningful learning (DML) method. Students were able to discuss the challenges they encountered related to their lack of personal comfort and limited expertise in discussing weight-related recommendations with the SP and how additional education on these aspects would be beneficial. The weight bias reduction educational session was conducted after the SBE and DML session and was embedded into the NP clinical curriculum, delivered by RDNs, who were members of the research team (but not the clinical course) and had expertise in weight management. The session included a slide presentation on the prevalence of obesity, genetic influences related to obesity, the negative impact of weight bias within health care, and strategies to reduce weight bias in clinical practice. A 17minute video, "Weight Bias in Healthcare," was also used. The students engaged in dialog regarding weight bias using questions such as "What are your current views toward patients with obesity?" and "Are you sensitive to the needs and concerns of individuals with obesity?". Students were also provided education on using person first language, preferred terminology to use during weight-related conversations, asking permission to discuss weight with the SP, and best practices for engaging in weight-related dialog.

		<p>being fearful about potential back injuries, and obese patients avoided seeking health care secondary to providers' uncaring conduct. Additionally, vignettes addressed inadequate equipment and furnishings to accommodate obese patients, creating embarrassment or impeding medical examinations. For example, use of computed tomography is dependent in part on the table weight limits. The stress of excess weight may impair the motor that controls scanner. Upon completion of the clinical session, a postquestionnaire was administered.</p>		
- Grounding theory	NR	<p>Lewin's three-step change theory: 1) unfreezing, recognising, and changing negative perceptions accompanied by adverse behaviour that contributes to the problem (identified from the literature). 2) moving, implementing a plan to prevent objectionable thoughts, and performance (group discussions). 3) refreezing, capturing the changes that were made, and instituting them as the new status quo with the development of more positive attitudes.</p>	<p>Attribution theory: which suggests that negative stereotypes and bias toward individuals are based on the belief that weight is a matter of personal responsibility and control.</p>	<p>Debriefing for meaningful learning uses a six-phase process: engage, explore, explain, elaborate, evaluate, and explain, which sets it apart from other debriefing techniques. This model aids in developing clinical reasoning and judgment for future health care workers through discussion and reflection after SBE. In addition, the DML method was used to give students a chance to learn from their simulation experiences from the debrief facilitators, nursing faculty, and other students.</p>
- Setting	A southeastern US school of nursing	Acute care hospital and a long-term care nursing home.	Private Catholic University	Private Catholic university in the Northeastern United States.
Outcomes				
- Description	Effects of the BSI on nursing students' attitudes toward obesity and beliefs about obese persons	The primary data collection instrument was the ATOPS, which revealed the results of the pre- and postintervention concerning obesity size, body odor, appearance, and lifestyle, along with provider's fear of a back injury.	Effect of the intervention on negative attitudes and beliefs of nursing students toward those with obesity.	Weight bias reduction

- Measurement tools	Nurses' Attitudes Toward Obesity and Obese Patients Scale (NATOOPS) Beliefs About Obese Persons (BAOP) scale	Attitudes Towards Obese Persons (ATOP) scale A self-designed questionnaire consisted of five items in a 4-point Likert format ranging from strongly agree to strongly disagree; during pre- and postinterventional phases, students were asked to complete 5 items: (1) Obese clients size is offensive to me; the larger the client, the more offensive. (2) Obese clients for the most part have a foul body odor. (3) Obese clients are usually sloppy in their appearance. (4) Obese clients are lazy with a lifestyle that lacks self-discipline. (5) I fear I will have a back injury when caring for an obese client. Content validity was established through a panel of experts consisting of medical-surgical nurses practicing on a unit with a high prevalence of bariatric patients.	Attitudes Towards Obese Persons (ATOP) scale Beliefs About Obese Persons (BAOP) scale	Attitudes Toward Obese Persons (ATOP) scale Beliefs About Obese Persons (BAOP) scale
- Measurement time points	Surveys immediately before the intervention, immediately after the intervention, and 30 days after the intervention.	Weekly sessions for 15 weeks: prequestionnaire, weekly meetings with exchange of ideas, obesity education, followed by post-questionnaire.	Data collection occurred on the first day of the medical-surgical nursing clinical experience and again at the conclusion of the semester.	Before and approximately 90 days (3 months) after the intervention. Immediately after the SBE, the research team distributed the QR code and Qualtrics links to complete a one-time demographic questionnaire and two additional standardised questionnaires. Approximately 3 months after the intervention, the students completed the postintervention questionnaires.
Effectiveness of interventions to reduce weight stigma				
- Among HCP and trainees	NR	NR	NR	NR
- Among students in the field of HC	NATOOPS subscales scores: The missing data rate was less than 6% at pre-intervention, 0% at immediate post-intervention, and 10% at 30-day postintervention. NATOOPS subscale scores decreased	Clinical groups had a significant positive change in their own weight prejudices after receiving obesity education. Comparing the initial pre-post intervention, results revealed a p-value of <0.00001 in all 5 areas of the ATOPS	ATOP scale: pre-intervention ATOP scores ranged from 38-110 with a mean score of 74.30, SD 14.61 and post-intervention ATOP scores ranged from 46-119 with a mean score of 84.54 , SD 15.33 with higher	ATOP scores were unchanged from before intervention (80.57 ± 14.03) to after intervention (80.43 ± 25.53), $p = 0.983$. No significant differences existed between pre-intervention BAOP scores (23.86 ± 8.21) and post-intervention BAOP scores (23.71 ± 8.69), $p =$

on all 5 subscales (indicating improvement in student attitudes toward obesity and obese patients) between the preintervention and the immediate postintervention assessments. However, these improvements were significant only for 3 subscales: characteristics of obese individuals (574.3, SD 88.4 vs 549.7, SD 88.4, $p=0.02$), controllable factors contributing to obesity (515.3, SD 77.5 vs 452.9, SD 77.5, $p < 0.0001$), and stereotypic characteristics (66.1, SD 26.5 vs 61.1, SD 26.5, $p=0.05$). Reductions in the other 2 NATOOPS subscale scores (response to obese patients: 446.8, SD 205.4 vs 444.2, SD 205.4 and supportive roles: 145.9, SD 26.5 vs 139.2, SD 26.5) were not statistically significant. When 30-day postintervention scores were compared with preintervention scores, only 2 subscales showed significant improvement in student attitudes: stereotypic characteristics (66.1, SD 29.7 vs 56.0, SD 29.7, $p=0.01$) and controllable factors contributing to obesity (515.3, SD 77.5 vs 472.7, SD 77.5, $p < 0.0001$). The subscale did not improve significantly in the 30-day postintervention: response to obese patients (466.8, SD 205.4 vs 478.7, SD 205.4), characteristics of obese individuals (574.3, SD 88.4 vs 571.3, SD 88.4), supportive roles in caring for obese patients (145.9, SD 26.5 vs 150.2, SD 26.5).

BAOP scale total score:
The mean total score on the BAOP

(offensive, foul body odour, sloppy appearance, lazy, fear back-injury). The initial pre-project questionnaire revealed that more than half of the students had negative opinions about obese patients along with concerns regarding sustaining back injuries. Upon completion of the obesity education intervention, students articulated awareness and actual remorse regarding their bias toward obese patients. Additionally, students expressed the new-found awareness of how weight-based discrimination negates patient-centered care and dramatically interferes with excellent delivery of care. Students were found to be more receptive, less judgmental, and had more facilitative communication regarding healthcare needs with obese patients. Students also became more engaged in teamwork, especially in support of using proper body mechanics to prevent nurse injuries.

scores demonstrating more positive attitudes toward individuals with obesity, a significant improvement in attitudes toward individuals who were obese ($p < 0.001$).

BAOP scale. pre-intervention BAOP scores ranged from 3-37, with a mean score of 18.25, SD 6.80, and postintervention BAOP scores ranged from 7-45, with a mean score of 22.22, SD 7.87, with higher scores indicating a stronger belief that other factors may contribute to obesity and that obesity was not under one's control, significant improvement in beliefs regarding the controllability of obesity ($p < .001$). More positive BAOP scores suggest fewer negative assumptions that individuals with obesity can control their weight status and other factors related to weight, such as genetics, may be considered.

0.980. Although this small pilot study did not detect significant changes in attitudes or beliefs toward persons living with obesity, it does take a much-needed first step by introducing a novel intervention using structured SBEs with SPs living with obesity to address the evidence gap and by evaluating its effectiveness as part of WBR interventions in the NP curriculum. Further research on the effectiveness of SBE-based WBR interventions using SPs living with obesity to measure changes in attitudes, beliefs, and behaviors is needed. In addition, multiple SBE encounters are warranted in large, more diverse samples using two groups, randomized research design.

	was higher immediately after delivery of the BSI than before the intervention, and the difference between these scores was significant (16.4, SD 5.5 vs 19.9, SD 5.5, $p < 0.0001$). Although the mean BAOP total score declined slightly between the immediate postintervention and 30-day postintervention time points, the final postintervention score remained significantly higher (16.4, SD 5.5 vs 18.2, SD 5.5, $p = 0.01$) than the preintervention score. These findings indicate that the BSI was associated with significant improvement in student beliefs.			
- Among patients	NR	In return, patients were seen to be more receptive to learning about their illness, treatments, medications, and managing their health care.	NR	NR
Conflict of interests and funding	NR	NR	NR	CoI: None Funding: NR

Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

*Tabelle A1-25: Wirksamkeitsergebnisse der Vorher-Nachher-Studien bei Student*innen in anderen Gesundheitsbereichen*

Authors, year	Gayer et al. 2017 [44]	Brochu et al. 2020 [47]	Werkhoven et al. 2021 [49]
Country	USA	USA	AUS
Target population (n)	Osteopathic students in the classes of 2013 - 2018 (n=718)	Clinical psychology graduate students, predoctoral interns, and post-doctoral fellows (n=45)	Undergraduate students in the field of pre-service health educators and & professionals (n=124)
Intervention(s)			

<p>- Description</p>	<p>Comprehensive obesity-specific curriculum designed to increase knowledge regarding obesity: 1st year students (class of 2015) attended lectures covering various topics relating to obesity (i.e., epidemiology; pathogenesis and metabolic factors; nutrition, diet, and physical activity; self-control and behavior modification; pharmacologic and nonpharmacologic management interventions; and associated chronic diseases). After the 5h curriculum, first-year students received a 14-item multiple-choice obesity examination provided during a larger midterm examination to assess knowledge gained. For second-year students in the class of 2015, the curriculum consisted of 3h of course material, which provided updated information based on new reviewed data over the previous year, reemphasised selected obesity topics, and included the following 2 additional topics: (1) the interaction through subclinical inflammation between obesity, metabolic abnormalities, and environmental change; and (2) a distinctive osteopathic approach to managing obesity. The curriculum was increased to 6h for the 1st year classes of 2016 - 2018. The multiple-choice examination was increased to 30 questions and given to students in a stand-alone examination, which contained 10 optimal performing items from the previous version based on item analysis (difficulty rating, discriminating index, and point biserial) along with 20 additional questions. For 2nd year students in the classes of 2016 - 2018, the curricular materials were deemed too dense for 3h, and the curriculum was increased to 4h. Students in the classes of 2015 - 2017 received a 25-question multiple-choice obesity examination. For 3rd year students, the curriculum included virtual patient case presentations using MedU (http://www.med-u.org), with supporting resources and formative assessment tools</p>	<p>3h face-to-face weight bias seminar on weight controllability beliefs, negative weight attitudes, and attitudes toward working with fat clients. It presented information that challenged assumptions about the health risks and consequences of fatness and myths regarding the controllability of weight, as well as information about the prevalence and harm of weight bias. For example, trainees learned that weight is a rather poor predictor of health; dieting is ineffective for long-term weight loss; weight discrimination is pervasive in a range of domains, including employment, education, health care, and interpersonal relationships; and that there are a number of negative consequences of weight stigma and discrimination on physical and mental health.</p> <p>Introduction to weight-inclusive models of health, such as HAES, which promote healthful approaches to eating, physical activity, and behavior change more generally; work to reduce weight stigma and discrimination; and foster strategies for coping with weight stigma. The seminar was run by the investigator, who has a PhD in social psychology and was at the rank of assistant professor at the time. The seminar was taught by the same speaker in the same week to three different sections of a required third-year graduate-level course in social psychology in a doctoral clinical psychology programme and in a mandatory professional development series taught to clinical psychology predoctoral interns and postdoctoral fellows 2 weeks later on a Friday morning. Participation in the study was voluntary.</p>	<p>Weekly lectures and tutorials (3h/week, in total: 36h in 12 weeks) focusing on nutrition and stigma reduction, informed by HAES. Theory for weight stigma was provided during the 4 hours of lectures and covered the following topics: the non-diet reasons for overweight and obesity, common attitudes held towards overweight and obese individuals, the influence of the media in promoting stereotypes, the effects of weight bias on stigmatised individuals, issues with accuracy and availability of health information and the importance of HAES in achieving health:</p> <ul style="list-style-type: none"> - Class debate on weight-based news articles. Students then allowed to select a pro/con stance and then asked to debate for opposing belief. - Peer-to-peer instruction through nutrition games such as 'nutrition bingo' for micronutrient and macronutrient knowledge. - Taste testing: Matched to topics such as sports nutrition or dietary guidelines, students were blindfolded and taste tested supermarket brand sports drinks or tried to taste the difference between sweet potato and carrot. - Think-Pair-Share class discussions: before large class discussions (n = 30), students sent off in pairs to discuss ideas before joining in peers for class discussion. - Paper crumpling exercise: Students write a weightbased perception on pristine paper. They crumple it and then attempt to unfurl the paper and restore it to its pristine state. The resulting damage to the paper is anthropomorphized, and metaphorically likened to possession of stigmatising attitudes towards individuals at a higher weight. Students are invited to tear up the paper, symbolic of awareness and rejection of such belief systems. - Social media deconstruction: Assessing 'fitspo' social media accounts for portrayal of realistic body sizes and healthful behaviours. - Fad diet presentations: Students provided with a list of common celebrity diets and evidence-based therapeutic diets, tasked with researching the benefits or drawbacks of following them. <p>Lectures for the subject were delivered by the researcher as a qualified dietitian and tutorials were delivered by the</p>
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	<p>covering obesity-related issues encountered in core clinical rotations in family medicine, internal medicine, obstetrics and gynecology, pediatrics, and surgery. 3rd year students were also assigned reading materials regarding the American College of Cardiology/ American Heart Association guidelines pertaining to obesity, the National Heart, Lung, and Blood Institute's research on obesity, healthy eating for children, and other related topics, such as metabolic syndrome.</p> <p>The classes of 2013 and 2014 (2nd and 3rd year students, respectively) were surveyed, although they did not receive the comprehensive obesity curriculum, to provide a secondary control group. These students did attend 2 - 3h of cumulative lectures on various topics (e.g., metabolic syndrome, type 2 diabetes mellitus, obstructive sleep apnea, infertility, nutrition, diet) and how they related to obesity. These students also took the multiple-choice examination that was given to the class of 2015, except that the examination for the class of 2013 had only 13 questions.</p>		<p>lecturer and other staff who had a background in health education, education or dietetics.</p>
- Underlying theory	NR	<p>Attribution-value model of prejudice: utilised to understand the mechanisms underlying prejudice, and thus identifies potentially important mechanisms that may underlie the efficacy of prejudice reduction interventions.</p> <p>Attribution theory</p> <p>Critical weight science</p>	<p>Attribution theory: Tackling the extent that students will attribute blame to overweight or obese individuals for being at fault for their weight status.</p> <p>Social Cognitive Theory: Individuals learn by observing other people's interactions and experiences, modelling their behaviour on others around them and their environment.</p> <p>HAES approach.</p>
- Setting	Touro University College of Osteopathic Medicine-CA (TUCOM)	NR	Numerous faculties
Outcomes			
- Description	Positive effect on students' weight bias	It was hypothesised that clinical psychology trainees who attended the weight bias seminar would report weaker weight controllability beliefs, less negative weight attitudes, and less negative attitudes toward fat clients 1 week afterward.	Decrease weight stigma and increase nutrition knowledge, targeting pre-service health educators and professionals during their undergraduate studies.

- Measurement tools	Survey based on the modified Fat Phobia Scale (FPS): 14 adjective pairs used in the scale describing obese and normal-weight people have been used to establish bias baselines in previous health care provider groups, including family physicians, dietician students, physician assistant students, and registered nurses.	Willpower subscale of the Anti-fat Attitudes Test (AFAT) Dislike subscale of the Anti-fat Attitudes Test (AFAT) Attitudes toward fat clients	General Nutrition Knowledge Questionnaire: assessment of nutrition knowledge. Anti-fat Attitudes Questionnaire (AFAT) Fat Stereotypes Questionnaire (FSQ)5
- Measurement time points	Students completed a survey before receiving any formal education related to obesity and after their 1st year of the curriculum and then once during the second half of their 2nd, 3rd, and 4th years of medical school. There was no educational intervention for 4th year students, but students did take the survey to determine whether the curriculum taken in previous years continued to have the same effect on the students' attitudes toward obesity.	1 week before and 1 week after the weight bias seminar during class time	Pre- and post-intervention surveys were conducted in weeks 1 and 12 of semester during the students' tutorials, with a response rate between time points of 56% including students who dropped out of the elective or opted not to take the survey. it was not possible to conduct follow-up surveys.
Effectiveness of interventions to reduce weight stigma			
- Among HCP and trainees	NR	NR	NR
- Among students in the field of HC	The mean (SD) survey score of the students who had not yet completed the obesity curriculum (classes of 2013 and 2014) was 3.64 (0.1) (p<0.01): 2013: n=120: mean score 3.76 (SE 0.04) vs NA 2014: n=119: 3.48 (0.04) vs NA compared with the mean (SD) score of 1st year students (n=502) who completed the curriculum (class of 2015-2018), which was 3.39 (0.05) (P<.01), indicating a decrease: 2015: n=116: mean score 3.65 (SE 0.04) vs. n=121: 3.47 (0.05), p<0.01 2016: n=120: 3.76 (0.04) vs. n=126: 3.38 (0.05), p<0.01 2017: n=127: 3.57 (0.04) vs. n=123: 3.34 (0.04), p<0.01 2018: n=116: 3.61 (0.04) vs. n=132: 3.37 (0.04), p<0.01	Weight controllability beliefs: As expected, participants reported weaker weight controllability beliefs 1 week after the weight bias seminar (m = 3.39, SD = 1.49) compared to responses 1 week before the weight bias seminar (m = 4.46, SD = 1.64), 95% CI [-1.224, -0.366]. The effect of seminar was not significant p = 0.604. Anti-fat Attitudes: As expected, participants reported weaker anti-fat attitudes 1 week after the weight bias seminar (m = 2.10, SD = 1.18) compared to responses 1 week before the weight bias seminar (m = 2.36, SD = 1.53), 95% CI [-0.743, -0.089]. The effect of seminar was not significant, p = 0.072. Attitudes toward fat clients: As expected, participants reported less negative attitudes toward fat clients 1 week after the weight bias seminar (m = 1.59, SD = .67) compared to responses 1 week before the weight bias seminar (m = 1.81, SD = .81), 95% CI [-0.799,	Nutrition knowledge: the nutrition knowledge accuracy score improved by 14% (SD = 9.47).The largest improvement in subscale scores was observed for the subscale representing the knowledge of links between diet and disease, a change of 23% (p <0.001).The scores for dietary recommendations also significantly improved by 20%, very similar to the 19% increase observed on the score representing knowledge of food sources of nutrients (p < 0.001).The only insignificant increase was observed on the subscale score representing knowledge of choosing everyday foods which did increase by 5% (p > 0.05). The effect size of all increases observed was large. Degree of weight bias observed on AFAT questionnaire at baseline and post-intervention was low in strength, but did shift in a positive way: 47.0 (SD 17.49) vs. 43.10 (SD 16.79), p<0.001. The effect size of this change was small. All subscale scores on this instrument reflected improvements to degree of bias possessed against overweight and obese

⁵ Participants' feedback on the intervention, which was gathered through focus groups, was not extracted, because it was not relevant for the aim of this report.

	<p>The current data suggest that providing a comprehensive obesity-related curriculum that includes biologic, psychosocial, epidemiologic, pathologic, and clinical aspects to medical students is vital to reducing bias against obesity and can better prepare them to address the concerns of their patients with obesity.</p>	<p>−0.035]. The effect of seminar was not significant, $p = 0.118$. Mediation: a mediation analysis was run modeling the effect of time (pre-test, post-test) on anti-fat attitudes via weight controllability beliefs as the mediator. The total effect of time on anti-fat attitudes was significant, $b = -0.26$, $SE = 0.12$, 95% CI $[-0.4994, -0.0295]$, indicating that anti-fat attitudes weakened from pre-test to post-test. When weight controllability beliefs were included as a mediator in the model, the direct effect of time on anti-fat attitudes was no longer significant, $b = -0.02$, $SE = 0.13$, 95% CI $[-0.2777, 0.2424]$. A similar mediation analysis modeling the effect of time on attitudes toward fat clients via weight controllability beliefs was also run. The total effect of time on client attitudes was significant, $b = -0.22$, $SE = 0.08$, 95% CI $[-0.3871, -0.0607]$, indicating that attitudes toward fat clients became less negative from pretest to posttest. When weight controllability beliefs were included as a mediator in the model, the direct effect of time on client attitudes was no longer significant, $b = -0.06$, $SE = 0.10$, 95% CI $[-0.2581, 0.1370]$. Importantly, an indirect effect of time on client attitudes through weight controllability beliefs was observed, $b = -0.16$, $SE = 0.10$, 95% CI $[-0.4133, -0.0207]$, indicating that weight controllability beliefs significantly mediated the reduction in negative attitudes toward fat clients from pretest to posttest.</p>	<p>individuals. The score reflecting dislike of fatness decreased by 17% ($p < 0.01$) and the score reflecting a fear of becoming fat decreased by 13% ($p < 0.05$) and the effect size of these changes was small. The belief that excess weight is due to a personal lack of willpower over diet and lifestyle decreased in degree by 12% ($p < 0.001$) and the effect size of this result was medium. The mean score on the FSQ did not display a significant result, however, did decrease in strength longitudinally by 25% ($p > 0.05$) and the effect size of this change was small. A significant result was observed on the score representing belief that it is good to be either fat or thin, with the polarity of the answer reflecting which physique was preferred. A very strong result was observed at baseline and post-intervention that it is good to be fat, although this did decrease significantly between time points ($p < 0.05$) and this change had a small to medium effect size. Attribution of laziness with obesity was present at both time points, and although insignificant ($p > 0.05$), a 25 per cent reduction in the degree of this belief was observed post-intervention, with a small effect size.</p>
- Among patients	NR	NR	NR
Conflict of interests and funding	NR	NR	CoI: None Funding: None

Abkürzungen: COI – Conflict of interest, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

1.2.5

Ergebnisse der Mixed-Methods-Studien

Tabelle A1-26: Wirksamkeitsergebnisse der Mixed-Methods-Studien

Authors, year	Luig et al. 2020 [53]	English et al. 2023 [54]	Gajewski et al. 2023 [55]
Country	Canada	Canada	USA
Target population (n)	1st year family medicine residents of 2 cohorts (fall 2015 and spring 2016) (n=61)	Patients with a self-reported BMI > 30 kg/m ² recruited through Obesity Canada and obesity specialist physicians across Canada (n=61)	Undergraduate 1st year nursing students (n=121, 86% of the 140 invited students)
Intervention(s)			
- Description	<p>5AsT-MD course as part of the mandatory Doctor-Patient Relationship (DPR) course. The fall cohort completed the following course components in 11h over 2 days. The spring cohort completed the same content in 8h over 2 days. Course elements:</p> <p>A) Interactive, discussion-based lectures covering: 1) the complex aetiology of obesity and its chronicity, 2) an introduction to the 5A's of Obesity Management and the 5AsT approach, 3) assessment and management of obesity in paediatrics 4) prevention, pregnancy and postpartum, 5) management of obesity, including lifestyle changes, medications and bariatric surgery.</p> <p>B) Empathy suit experience: the empathy suit simulates a body size in the obesity class. Learners experienced the incumbrance of obesity spending approximately 15 min in a Smart Condo executing tasks of daily living (i.e., getting dressed, cleaning the apartment, getting out of bed, making the bed).</p> <p>C) Then, residents were asked to complete a onepage narrative reflection on their experience wearing the suit. At the next session, residents discuss their experiences and reflections in small groups facilitated by expert preceptors.</p> <p>D) Standardised patient interviews: Residents demonstrate their use of the 5A's by practicing with standardised patients. Patient cases were designed to focus on specific parts of the 5A's (i.e., ASK, ASSESS, ADVISE, AGREE, ASSIST) and to allow residents to practice the skills and tools they have learned.</p> <p>E) Then, residents debrief in small groups, which</p>	<p>Then participants were asked to watch the first video, which depicted a traditional 'eat less, move more using willpower' approach to obesity management. Then they completed the WBIS and the PHCPCS. Next, the revised narrative video was watched: 3 characters; the Gate-Keeper (the homeostatic system), the Go-Getter (the hedonic system) and the Sleepy Executive (the executive system). It also presented obesity as a chronic disease for which there are effective treatments (9:43 minutes). And following the WBIS and PHCPCS scales were again completed.</p> <p>Prior to watching the videos participants were instructed to imagine that this were their physician discussing their weight. Prior to completing the scales participants were asked to complete items as if this was their treating physician.</p> <p>Once the two videos were reviewed and scales completed, participants responded to several questions concerning their attitudes to the core story material.</p> <p>Finally, participants were offered the opportunity to make open ended comments about the study.</p>	<p>The study took place during the Health Assessment lab scheduled for 2h sessions each week over 3 weeks.</p> <p>During the second lab session, students participated in empathy learning activities: reading an article (titled "Weight Bias in Healthcare: A Guide for Healthcare Providers Working with Individuals Affected by Obesity", Obesity Action Coalition and the Rudd Center for Food Policy and Obesity, 2021), and viewing a video on weight bias (TED Talk video that showed an individual with obesity talking about their experiences in the healthcare setting), followed by a class discussion of the content.</p> <p>During the third lab session: simulation activity. The scenario took place in the university's simulation lab in a simulated hospital room with a standardised patient. A hospital bed, a recliner chair, a bedside table, an IV pole and a vital signs machine were in the room. The standardised patient was an employee from the university who wore an obesity suit allowing students to simulate being the nurse interacting with a person with obesity in the healthcare setting. Embedded in the script were cues indicating the patient was experiencing physical barriers in the environment related to their weight. For example, the patient stated that the chair was too small on which to sit.</p> <p>Students were informed that they would complete the simulation individually within a 10-minute timeframe.</p>

	include their preceptor, the standardised patient, and their peers. F) In-clinic practice: Residents practice the newly acquired skills and knowledge with one of their own patients in clinic. G) Residents reflect on their experience in a one-page narrative, which they debrief with their preceptor.		
- Underlying theory	NR	Knowledge translation strategy to provide a simple way of reeducating people that weight is not a behaviour in that it is not under behavioural control and that weight and weight loss are determined by biological and environmental factors.	Kolb's 4-stage experiential learning model: promote a transfer of knowledge to practice. In the first stage, the concrete experience, the learner is exposed to the subject content, such as weight bias and the science behind obesity. In the reflective observation stage, the learner reflects on the content taught, looking at the big picture and evaluating the experience through multiple perspectives. In the abstract conceptualization stage, the learner analyzes the concepts and plans on how to act in actual situations. Finally, in the active experimentation stage, the learner applies hands-on learning skills for knowledge construction.
- Setting	University of Alberta	NR	Midwestern public university
Outcomes			
- Description	The courses' impact on residents' knowledge, attitudes, and confidence with obesity counselling.	Internalised weight bias and perceived patient-provider relationship (which care provider depicted in the videos was preferred by the participant (provider in Video 1 or 2), the extent to which HCP messaging impacts participants' view of living with obesity, the extent to which participants' think all healthcare providers should be aware of the underlying mechanisms of obesity)	Empathy: an individual's ability to be open to and understand the unique experience of the other, looking at verbal and nonverbal physical cues.
- Measurement tools	<u>Quantitative analysis:</u> Beliefs About Obese Persons Scale (BAOP) Attitudes Towards Obese Persons Scale (ATOP) Changes in residents' level of confidence was assessed using a 29-item questionnaire which was developed specifically for this course. The survey uses a 5-point Likert scale to rate: 1) the importance of obesity	<u>Quantitative analysis:</u> Weight Bias Internalization Scale (WBIS) Patient-Health Care Provider Communication Scale (PHCPCS) <u>Qualitative methods:</u> Comments	<u>Quantitative analysis:</u> Self-reported empathy scores on the Jefferson Scale of Empathy-Health Professions Students (JSE-HPS) Empathy scores assigned by a standardised patient on the Jefferson Scale of Patient Perceptions of Nurse Empathy (JSPNE)

	<p>management as part of family physicians' role; 2) perceptions on the adequacy of previous training in obesity management; 3) motivation to learn more about this area; and, 4) 22 items about comfort using the 5As in their consultations with patients.</p> <p><u>Qualitative methods:</u> Narrative reflections: residents, participants wrote two brief narrative reflections as part of their course assignment. First, data, codes, and emergent themes were discussed during monthly team meetings that included researchers, course instructors, and a patient champion until consensus was reached. Second, guided by these patterns, TL and EC reviewed the literature in education and added theoretically derived codes to the node manual to generate findings that can be analyzed and situated in existing pedagogical theory. All narratives were re-coded using the revised manual including inductive and deductive nodes.</p>		<p><u>Qualitative methods:</u> Debriefing: addressed the student's reactions to the simulation and understanding of the case.</p>
- Measurement time points	Three pre- and post- questionnaires & narrative reflections one after wearing the empathy suit; and the second after the in-clinic practice.	NR	Before and after participation in learning activities addressing weight bias
Effectiveness of interventions to reduce weight stigma			
- Among HCP and trainees	<p>BAOP questionnaire: a significant improvement in study participants' positive beliefs about people living with obesity following the course (19.86, SD 5.94 vs 24.03, SD 7.54, p=0.001).</p> <p>ATOP questionnaire: no meaningful change in attitudes toward people living with obesity (73.15 SD 16.58 vs 69.26, SD 17.75, p=0.0959).</p> <p>29-item questionnaire: Following the course, residents still felt that obesity management was an important part of their job, but 47% of the residents felt better trained and 88% wanted to learn more. Statistically significant results were found in 9 of the 22 parameters on the course questionnaire, which measured changes in residents' self-reported confidence in their weight management encounters. Residents felt more comfortable assessing root causes, advising on treatment options, agreeing with patients on goals, assisting patients in addressing barriers, counseling on</p>	NR	NR

	<p>weight gain during pregnancy, counseling on weight-related depression and anxiety, counseling on iatrogenic causes of weight gain, counseling patients who have children with obesity, and referring patients to interdisciplinary healthcare providers for care.</p> <p>Narrative reflections: Experiential learning proved crucial in increasing residents' stated ability to empathically engage with patients and critically reflect on the implications for their practice. Residents wrote about how they came to realize that their recommendations to patients might have been unrealistic and unhelpful.</p> <p>Reflexivity: Learning about the complexity and chronicity of obesity encouraged residents to re-investigate their assumptions about the causes of obesity, management and counselling, and their professional identity with regards to supporting patients, adopt more empathetic and comprehensive approaches to weight management.</p> <p>The 5As and 5AsT tools: Most residents described the 5As of obesity management as a useful framework, and the 5AsT tools as helpful, to improve the quality of their practice and increase their confidence with weight counselling. Many highlighted the importance of beginning the the conversation by asking the patient for permission to talk about weight. As a result, they felt they were able to create a respectful relationship with patients; and patients were more open to the discussion. Others emphasised the benefit of asking the patient about their story of weight gain for comprehensively assessing root causes.</p> <p>Complexity of obesity: Some described discomfort with the subject and fear of offending patients. Others wrote about how they perceived patients to "fail" with weight management and, as a result, feel frustrated with being unable to help. Time limitations were mentioned as another challenge. A small number explained the difficulty of letting go of expectations of weight loss for both patients and for themselves as physicians.</p>		
<p>- Among students in the field of HC</p>	<p>NR</p>	<p>NR</p>	<p>The mean score on the JSE before learning activities was 115.5 (SD 17.7) and post-teaching activities and simulation experience was 115.9 (11.5). The scores</p>

			<p>were in the very high empathy level range ($p=0.635$). Subscale Perspective Taking: 59.9 (6.5) vs 61.2 (6.2), $p=0.018$ Subscale Compassionate Care: 45.8 (4.2) vs 45.4 (5.7), $p=0.416$ Subscale Standing in Patient's Shoes: 9.5 (2.6) vs. 9.4 (2.8), $p=0.041$</p> <p>The overall mean score on the JSPNE was 17.33, with scores between 5 and 35. Eight percent of students scored high (24–35), 79 % scored moderate (12–23) and 13 % scored low (0–11). A linear regression comparing post scores on the JSE-HPS and scores on the JSPNE showed no significant relationship.</p> <p>Debriefing: Students stated they had been able to conduct a focused assessment and had gathered the information needed to develop a plan of care. They also stated they had demonstrated empathetic communication with the obese patient. However, students verbalised that knowing what communication skills to use had been challenging. The communication techniques discussed in the article were difficult to implement in person. Some stated they understood the patient's frustrations within the environment, while others stated it was too short a time to understand the patient's perspective. When asked how they would handle the situation differently if they could repeat the simulation, students stated they would be more relaxed. They verbalised a need for more practice talking to patients requesting to repeat the simulation or do similar simulations.</p>
- Among patients	NR	<p>Compared to the traditional video that portrayed a physician endorsing the 'eat less, move more using willpower' narrative, the revised obesity as a chronic medical disease resulted in significant reductions in all measures of internalized weight bias (all p values <0.001): Total WBIS: 4.49 vs. 3.36, $p<0.001$ WBIS distress: 5,72 vs. 4.35, $p<0.001$</p>	NR

WBIS self-devaluation: 3.32 vs. 2.56, $p < 0.001$

The revised narrative video resulted in significant increases in total scores as well as quality communication scores, and a significant reduction in negative communication:

PHCPCS total: 2.65 vs. 4.20, $p < 0.001$

Quality communication: 2.63 vs. 4.22, $p < 0.001$

Negative communication: 3.25 vs. 1.89, $p < 0.001$

Virtually all (98.2%) preferred the revised narrative video over the traditional one.

when asked the extent to which participants believe that the messages provided by their HCP affects their views of living with obesity, the majority (57.1%) selected 'completely'.

The extent to which HCPs should be aware of the mechanisms underlying obesity 85.7% selected 'to a great extent'.

How the revised narrative impacted the participants' view of obesity 35.7% selected 'it makes me feel more hopeful' and 57.1% selected 'it makes me feel like I deserve to be treated for this medical condition'.

Qualitative analyses (responders rate: 45.9%):

In total, 82 comments were coded, the most frequent being general and positive comments about Video 2 followed by comments concerning externalized bias, negative comments about HCP relationships, internalized bias, and hopeful comments (there were at least eight comments in each of the above categories).

Collectively the dominant themes reflected positive comments about the revised narrative video, and expression of hope based on that revised narrative.

Example: "I loved the [core story] video. Really removes the blame from the obese person and lays out the health condition without judgment or stigma."

Conflict of interests and funding	CoI: DCS, received an unrestricted educational grant from Novo Nordisk via Obesity Canada to support the training of physicians and teams in obesity prevention and management. AMS is a member of an advisory board and speaker's bureau with Novo Nordisk and Valeant and was a member of the Data Safety Monitoring Board for an anti-obesity trial (Takeda). Funding: The 5AsT-MD study was funded by Alberta Innovates-Health Solutions (AIHS), with significant in kind support from the Department of Family Medicine at the University of Alberta, and an unrestricted educational grant through Obesity Canada supported by Novo Nordisk to support training of physicians and teams in obesity prevention and management. None of the funders had a role or influence in the design of the study or in collection, analysis and interpretation of data, or in writing of the manuscript.	CoI: None Funding: NR	CoI: None Funding: NR
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Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

1.2.6 Ergebnisse der qualitativen Studien

Tabelle A1-27: Wirksamkeitsergebnisse der qualitativen Studien

Authors, year	Hales et al. 2018 [56]	Fox et al. 2023 [57]
Study type	Qualitative study	Qualitative study
Country	New Zealand	USA
Target population (n)	HCP (n=7: 6 registered nurses and 1 registered physiotherapist)	1st and 2nd year medical students (n=4) Community members (n=2)
Intervention(s)		
- Description	Following completion of the questionnaire and semi-structured interview, participants then were asked to wear the simulation suit for approximately 2-3h and undertake a series of activities. The suit weighed approximately 7.5 kg and simulated the shape and size of a person with extreme obesity, although not the actual weight. Participants were asked to engage in activities such as walking up and down stairs, tying shoelaces, taking public transport, visiting a café, or going food shopping in a large metropolitan supermarket. Following the activities, the participants, while still wearing the suit, were interviewed about their experiences. In addition, given the possibility that the experience of wearing the simulation suit	2h narrative medicine workshops once a week for 5 weeks: the week's text (texts that specifically dealt with experiences of being fat) was distributed or projected and written texts were read out loud by workshop participants. Next, facilitators led a discussion of the text centered around its literary aspects, such as genre, tone, diction, and use of figurative language. After approximately 45 minutes of discussion, facilitators provided a writing prompt and asked each participant to write whatever came to mind for 5 minutes. Participants were encouraged to read their writing out loud to the group. If they invited feedback, other participants discussed the literary components of their response and what elements of the

	might undercover some surprising, unanticipated, or negative emotions, all participants were offered the opportunity to be accompanied by a research assistant on their activities during the experience, and provision was made for counseling services if required after the experience.	writing were impactful. At the end of the first workshop, participants were given a take-home writing assignment: "Write about a time you witnessed, participated in, or experienced fatphobia in a clinical encounter." In week 2, the workshop followed the same structure until the final 20 minutes, when participants were asked to form triads (two medical students and one community member) and read and comment on each other's writings from the take-home assignment. This structure was repeated in weeks 3, 4, and 5.
- Underlying theory	NR	Narrative medicine: is a field dedicated to teaching clinicians "the narrative competence to recognize, absorb, interpret, and be moved by the stories of illness". In a narrative medicine workshop, a trained facilitator guides a group of HCPs (or occasionally patients) through the process of a) reading, discussing, and interpreting a literary text, b) writing short responses, and c) discussing these writings with each other.
- Setting	Participants worked in a variety of healthcare settings including acute in-hospital services, palliative care, occupational health, and private practice plus tertiary education (university).	Keck School of Medicine of the University of Southern California
Outcomes		
- Description	Perceived difficulties a person with obesity may face on a daily basis, during exercise, and when engaging with health care services; Perceived feelings when in public places; And what HCP should know or try to find out from people with obesity;	Information about participants' views of the integrated narrative medicine and direct contact approach to reduce weight stigma.
- Measurement tools	Short questionnaire consisting of 5 open-ended questions about the outcomes ⁶ ; This was followed by a semi-structured interview that focused on reasons for participating in the study and provided an opportunity for the participant to elaborate on the 5 items in the questionnaire. Interviews were conducted by the third author and a research assistant with specific experience in interviewing people with obesity and other vulnerable populations. Interviews lasted between 20 and 40 minutes and were conducted 1 participant at a time in a private research room. All interviews were audiotaped and transcribed by a member of the research team.	Medical students and community members were interviewed in separate focus groups one week after the workshops ended for 90 minutes: The first 4 questions: general understanding of weight stigma in healthcare and in broader society; The next 5 questions: participant reactions to the use of narrative methods for addressing weight stigma; The next 3 questions: usefulness of direct contact and collaboration; The final 6 questions: ideas for overcoming weight stigma in healthcare.
- Measurement time points	NR	After the workshops
Effectiveness of interventions to reduce weight stigma		

⁶ Due to the small sample size (n=7) the results of the short questionnaire were not further investigated.

<p>- Among HCP and trainees</p>	<p>Three (3) primary themes emerged through the interviews: (1) insights into the physical challenges facing people with extreme obesity, (2) awareness of social consequences for people with extreme obesity, (3) changes in participants' attitudes toward people with extreme obesity:</p> <p>(1) The 6 female participants reported issues related to the physical effects of wearing the simulation suit and related mobility difficulties. They commented how their physical size affected their ability to safely and easily negotiate environments they had not previously regarded as challenging.</p> <p>(2) These experiences of social stigma also were reported to occur within the hospital and were enacted by health professionals: "What I did notice was walking along the corridors in the hospital, hospital staff don't look at you. Well they don't look at your eyes. They don't make eye contact. As they go past, they drop their eyes and look across at your body... And not a single person smiled at me" (participant 3). "You sort of felt very observed by people who were staff members in the hospital. Some patients, or visitors were quite conspicuous in their observation as well but not as much. There were a couple staff members who I really felt were observing me... it did feel like I was being judged a couple of times" (Participant 7). Other comments reflected insights into how the experience of social stigma could result in socially isolating behaviors: "I wouldn't go out. I'd probably do online shopping. I'd do my supermarket shopping online too. Yep, it's not fun being out and about... Quite isolating I think. Really lonely. Miserable actually. I could be quite easily depressed in this suit if I had to wear it for ages. Awful... I feel really isolated in this suit. Nobody wants to be near you" (Participant 1).</p> <p>(3) Before the simulation activity, these health professionals were concerned about the challenges associated with caring for patients with obesity, which included having to talk about size and dealing with the distress and frustration because of the perception that patients did "not help themselves" when in hospital. When asked about whether the experience of wearing the simulation suit had influenced their own attitudes toward people with obesity, participants reported intentions to be less judgmental and more empathetic and understanding of the specific needs of people with obesity: "I probably wouldn't judge them as much now if I saw them walking slowly, 'cause I realise you actually couldn't walk very fast. And if I had seen someone walking up the stairs my size or going very slowly before, I may have thought, 'Oh, they're a bit lazy' whereas now I would just think, 'Oh, they're doing quite well!' I would feel yeah, more empathy" (Participant 2). "I'm going to make damn sure that they're comfortable about sitting down! I'm going to make sure that there's a big enough seat for them and that it's not gonna move when they sit on it. I'm going to make sure that they've got thousands of tissues to mop up the sweat. That whole spatial thing of remembering that they can't see their feet. And give them time. Because getting somewhere is going to be so exhausting that you can't expect them to do anything straight away. 'Cause actually they're going to need 5 minutes to recover" (Participant 3).</p>	<p>NR</p>
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	<p>Wearing a simulation suit enabled participants to experience, albeit briefly, a pseudo lived experience of people with extreme obesity, contributing to a better understanding of the physical and social challenges that may be faced daily by persons with excessive weight. Participants experienced physical and social impacts that had not been anticipated for the short period of time they wore the suit and reported intentions to be more empathetic regarding the needs of people with obesity. However, ethical guidance needs to be developed in conjunction with further research to explore the risks and mitigation of increasing unintended weight bias when working with simulation suits in clinical practice and education.</p>	
<p>- Among students in the field of HC</p>	<p>NR</p>	<p>Focus group results: the intervention created the depathologising, humanising, and empathetic interactions that we theorised are important for eradicating weight stigma. Opportunity for medical students to think critically about the causes and consequences of the pathologisation of fat people. When asked to define fatphobia and speculate on why it exists, the medical students provided broad, complex definitions that acknowledged interpersonal (misunderstanding, discomfort), social (stereotyping, negative media portrayals), and structural (medicine as “normalized” for thin, White, male bodies) discrimination against fat people.</p> <p>Participants also reported that the workshops facilitated humanising interactions between medical students and community members. Medical students expressed gratitude multiple times for the chance to hear directly from people with unique knowledge about “the fat experience.”</p> <p>Another important aspect of humanisation is acknowledging the individuality of members within a group. Medical students reported that the workshops helped them see how important it is to solicit and respect fat people’s stories. One student said: “I think before the workshop, I underestimated how much every community member had heard the same thing from every doctor they saw. Even if every doctor had good intentions when they said, “maybe you should exercise,” [the community members] had already heard it so many times before that it just became white noise. I think I would want to keep that in mind whenever I talk to patients, that I’m not the first doctor that they’ve seen and if I want to really have an impact on them, I need to think carefully about individualizing my care and making sure I’m not just saying the same thing everyone else has said and being specific to their needs.”</p> <p>The student then determines that, if they want to help fat people in their future medical practice, they must break this pattern of dehumanization by paying attention to fat people’s individuality and “being specific to their needs.” A medical student described how the discussions deepened their capacity to engage with the texts in an empathetic way, stating, “[T]he act of trying to understand the point they’re making and then, in that sense, reach them halfway is an act of empathy and trying to understand their point of view.” Because the experiences of</p>

		<p>empathy in our intervention emerged from complex, open-ended interactions with actual fat people, this empathy took a form that was contextualized, individualized, depathologised, and generative. one student reported that the narratives communicated a particular feeling or experience from a fat person's point of view: "A lot of times the prevailing anxiety was something like 'people only see me for being fat, they don't see me as anything else.' Understanding that that was anxiety ... and feeling that yourself ... definitely increased my empathy." Medical students drew organically on their empathic experiences to generate new ways of relating to fat patients. A students concluded: "[T]here's no need as a doctor to add to that, especially, for example, [if a patient is] coming in for a pelvic exam, there's no reason to bring up their weight or give them a pamphlet for how to lose weight. It's one thing if they're coming in asking the doctor about ways to lose weight, but if they're coming in for some other problem that's totally unrelated, just hearing these stories has solidified the idea that there's no reason to bring that up in any sort of way." the medical students came to see fighting against weight stigma in healthcare as their own responsibility, and they believed they had the knowledge and tools needed to take on that duty.</p>
- Among patients	NR	<p>One community member explained: "[It] was heartwarming to me to have people be so empathetic and open-minded to me. I actually feel like they felt my pain and that they cared for us." Both members reported feeling moved by interacting with the medical students.</p> <p>One member recounted feeling deeply gratified by a moment in her take-home writing when she found a new metaphor that helped her communicate the experience of being discriminated against because of her weight.</p>
Conflict of interests and funding	<p>CoI: NR Funding: Funding support was provided by the Victoria University of Wellington for the employment of research assistants for this study.</p>	<p>CoI: None Funding: NR</p>

Abkürzungen: COI – Conflict of interes, HCP – Healthcare professionals, NR – Not reported, USA – United States of America

1.3 Qualitätsbewertung der Wirksamkeitsstudien (FF2)

1.3.1 Verzerrungspotential randomisierter Kontrollstudien

Tabelle A1-28: Bewertung des Verzerrungspotentials der randomisierten Kontrollstudien (Cochrane Risk of Bias Tool [58])

Trial	Endpoints	Sequence generation	Allocation concealment	Blinding of participants, personal and outcome assessors	Incomplete outcome data addressed	Free of selective outcome reporting	Other sources of bias	Overall risk of bias
Matharu et al. 2014 [28]	Implicit bias, explicit bias and physician empathy	Yes	Yes	Unclear ⁷	Yes	Yes	No	Low
Nickel et al. 2019 [31]	Obesity stereotypes	Unclear	Unclear	Unclear	Yes	Yes	No	Unclear
Olson et al. 2018 [29]	Internalised weight bias and body appreciation	Yes	No ⁸	No ⁹	Unclear	Yes	Yes ¹⁰	High
Cohen et al. 2019 [30]	Clinical and interpersonal communication outcome variables	Unclear	Unclear	Yes	Yes ¹¹	Yes	No	Unclear
Fitterman-Harris et al. 2021 [32]	Weight bias	No ¹²	Unclear	Unclear ¹³	Yes	Yes	No	High
Oliver et al. 2021 [33]	Explicit weight bias	Yes	Unclear	Yes	Yes	Yes	Yes ¹⁴	Unclear

⁷ Only mentioned that three evaluators who were unaware of the treatment group independently scored the open-ended answers with any disagreements resolved by discussion.

⁸ The first author generated the sequence and prepared sequentially numbered envelopes prior to enrolling participants.

⁹ Study staff and participants were blinded to group assignment only until the end of the baseline assessment when assignment was revealed.

¹⁰ Conflict of interests were not reported.

¹¹ Not all physician trainees mentioned weight and as such, these individuals were excluded from all following analyses.

¹² Alphabetical order.

¹³ Students were informed as to which room to report, not knowing to which group they had been assigned. Research staff not reported.

¹⁴ The results have shown that this cluster-randomised trial has a very large cluster effect.

Welzel et al. 2021 [34]	Primary: Corresponding to the 5A framework, provider-patient interaction regarding the management of obesity Secondary: patients' health-related quality of life, depressive symptoms, internalised weight bias, anxiety symptoms, personality traits and counseling experiences of patients.	Yes	Yes	Unclear	Yes	Yes	No	Low
Wijayatunga et al. 2021 [35]	Change in the "blame", "social" and "physical" component of explicit bias, implicit bias	Yes	Yes	No ¹⁵	Yes	No ¹⁶	No	Unclear
Potts et al. 2022 [36]	Internalised weight bias, acceptance and action for weight-related difficulties, acceptance and commitment therapy processes, book usage and satisfaction	Yes	Yes	Unclear	Yes	Yes	No	Low
Joseph et al. 2023 [37]	Weight bias, positive emotions, self-compassion, compassionate care, attitudes towards "obesity", internalisation of the thin ideal	Yes	Yes	Unclear	Yes	Yes	Yes ¹⁷	Unclear
Pearl et al. 2023 [38]	Internalised weight bias, treatment acceptability	Yes	Yes	No ¹⁸	Yes	Yes	Yes ¹⁰	Unclear

Abkürzungen: AS – Appropriate shocks, ATP – Anti-tachycardia pacing, IAS – Inappropriate shocks, QoL – Quality of life, SCD – Sudden cardiac death

¹⁵ Participants were blinded about the purpose of the study. Researchers were not blinded when performing data analysis and they were not directly involved in the randomisation or data collection.

¹⁶ The analysis for 1-month follow-up changes in weight bias is not presented because of high attrition rates.

¹⁷ Post-intervention-only measures (measurement directly after the intervention), the lack of longitudinal data is a limitation of the current study.

¹⁸ Participants, study investigators, and staff (including assessors) were not masked to group assignments after randomisation.

1.3.2 Verzerrungspotential nicht-randomisierter Kontrollstudien

Tabelle A1-29: Bewertung des Verzerrungspotentials der nicht-randomisierten Kontrollstudien (ROBINS-I Tool [59])

	Wijayatunga et al. 2019 [39]		Nestorowicz et al. 2021 [41]		Jones et al. 2021 [40]	
Signalling questions	Description	Response options	Description	Response options	Description	Response options
Bias due to confounding						
1.1 Is there potential for confounding of the effect of intervention in this study? If N/PN to 1.1: the study can be considered to be at low risk of bias due to confounding and no further signalling questions need be considered If Y/PY to 1.1: determine whether there is a need to assess time-varying confounding:	insufficient adjustment	PY	Effects of the other courses of the curriculum	PY	Insufficient adjustment	PY
1.2. Was the analysis based on splitting participants' follow up time according to intervention received? If N/PN, answer questions relating to baseline confounding (1.4 to 1.6) If Y/PY, go to question 1.3.	-	N	-	N	-	N
1.3. Were intervention discontinuations or switches likely to be related to factors that are prognostic for the outcome? If N/PN, answer questions relating to baseline confounding (1.4 to 1.6) If Y/PY, answer questions relating to both baseline and time-varying confounding (1.7 and 1.8)	-	NA	-	NA	-	NA
Questions relating to baseline confounding only						
1.4. Did the authors use an appropriate analysis method that controlled for all the important confounding domains?	regression	PY	-	N	-	PN
1.5. If Y/PY to 1.4: Were confounding domains that were controlled for measured validly and reliably by the variables available in this study?	-	PY	-	NA	-	NA
1.6. Did the authors control for any post-intervention variables that could have been affected by the intervention?	-	NI	-	NI	-	NI
Questions relating to baseline and time-varying confounding						
1.7. Did the authors use an appropriate analysis method that controlled for all the important confounding domains and for time-varying confounding?	-	NI	-	PN	-	NI
1.8. If Y/PY to 1.7: Were confounding domains that were controlled for measured validly and reliably by the variables available in this study?	-	NA	-	NA	-	NA
Risk of bias judgement		Moderate		Moderate		Moderate

Bias in selection of participants into the study						
2.1. Was selection of participants into the study (or into the analysis) based on participant characteristics observed after the start of intervention? If N/PN to 2.1: go to 2.4	-	N	-	N	-	No
2.2. If Y/PY to 2.1: Were the post-intervention variables that influenced selection likely to be associated with intervention?	-	NA	-	NA	-	NA
2.3 If Y/PY to 2.2: Were the post-intervention variables that influenced selection likely to be influenced by the outcome or a cause of the outcome?	-	NA	-	NA	-	NA
2.4. Do start of follow-up and start of intervention coincide for most participants?	-	Y	-	Y	-	Y
2.5. If Y/PY to 2.2 and 2.3, or N/PN to 2.4: Were adjustment techniques used that are likely to correct for the presence of selection biases?	-	NA	-	NA	-	NA
Risk of bias judgement	-	Low	-	Low	-	Low

Bias in classification of interventions						
3.1 Were intervention groups clearly defined?	-	Y	-	Y	-	Y
3.2 Was the information used to define intervention groups recorded at the start of the intervention?	-	PY	-	PY	-	NI
3.3 Could classification of intervention status have been affected by knowledge of the outcome or risk of the outcome?	-	PN	Students self-selected to be in the interventional group	PY	-	PN
Risk of bias judgement	-	Low	-	Moderate	-	Low

Bias due to deviations from intended interventions						
If your aim for this study is to assess the effect of assignment to intervention, answer questions 4.1 and 4.2						
4.1. Were there deviations from the intended intervention beyond what would be expected in usual practice?	-	N	-	N	-	N
4.2. If Y/PY to 4.1: Were these deviations from intended intervention unbalanced between groups and likely to have affected the outcome?	-	NA	-	NA	-	NA
If your aim for this study is to assess the effect of starting and adhering to intervention, answer questions 4.3 to 4.6						

4.3. Were important co-interventions balanced across intervention groups?	-	NA	-	NA	-	NA
4.4. Was the intervention implemented successfully for most participants?	-	NA	-	NA	-	NA
4.5. Did study participants adhere to the assigned intervention regimen?	-	NA	-	NA	-	NA
4.6. If N/PN to 4.3, 4.4 or 4.5: Was an appropriate analysis used to estimate the effect of starting and adhering to the intervention?	-	NA	-	NA	-	NA
Risk of bias judgement		Low		Low		Low

Bias due to missing data

5.1 Were outcome data available for all, or nearly all, participants?	-	Y	-	Y	-	Y
5.2 Were participants excluded due to missing data on intervention status?	-	PN	-	NI	-	N
5.3 Were participants excluded due to missing data on other variables needed for the analysis?	-	NI	-	NI	-	N
5.4 If PN/N to 5.1, or Y/PY to 5.2 or 5.3: Are the proportion of participants and reasons for missing data similar across interventions?	-	NA	-	NA	-	NA
5.5 If PN/N to 5.1, or Y/PY to 5.2 or 5.3: Is there evidence that results were robust to the presence of missing data?	-	NA	-	NA	-	NA
Risk of bias judgement	-	Low		Low		Low

Bias in measurement of outcomes

6.1 Could the outcome measure have been influenced by knowledge of the intervention received?	-	PY	-	PY	-	PY
6.2 Were outcome assessors aware of the intervention received by study participants?	-	PY	-	PY	-	PY
6.3 Were the methods of outcome assessment comparable across intervention groups?	-	Y	-	Y	-	Y
6.4 Were any systematic errors in measurement of the outcome related to intervention received?	-	NI	-	NI	-	NI
Risk of bias judgement	-	Moderate		Moderate		Moderate

Bias in selection of the reported result

Is the reported effect estimate likely to be selected, on the basis of the results, from...						
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7.1. ... multiple outcome measurements within the outcome domain?	-	PN	-	PN	-	PN
7.2 ... multiple analyses of the intervention-outcome relationship?	-	PN	-	PN	-	PN
7.3 ... different subgroups?	-	N	-	N	-	N
Risk of bias judgement	-	Low		Low		Low

Overall bias						
	Risk of bias judgement		Moderate*		Moderate*	Moderate*

*The study provides sound evidence for a non-randomised study but cannot be considered comparable to a well-performed randomised trial.

Study reference/ID	Kushner 2014, [42]	Molloy 2016, [43]	Gayer et al. 2017, [44]	Barra et al., 2018, [45]	Geller. 2018, [46]	Brochu 2020, [47]	Oliver 2020, [48]	Werkhoven 2021, [49]	Renold 2023, [50]	Oliver 2023, [51]	Trofymenko 2024, [52]
Study objective											
12. Were the relevant outcomes measured using appropriate objective/subjective methods?	No ¹⁹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13. Were the relevant outcome measures made before and after the intervention?	Yes	Yes	Yes	Yes	No ²⁰	Yes	Yes	Yes	Yes	Yes	Yes
Statistical Analysis											
14. Were the statistical tests used to assess the relevant outcomes appropriate?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Results and Conclusions											
15. Was follow-up long enough for important events and outcomes to occur?	Yes	No	Yes	No	No	No	NR	No	No	No	No
16. Were losses to follow-up reported?	Yes	Yes	Yes	NA	Yes	No	NR	Yes	Yes	Yes	No
17. Did the study provided estimates of random variability in the data analysis of relevant outcomes?	Yes	Yes	Yes	NA	Yes	Yes	Yes	Partial	Yes	Yes	Yes
18. Were the adverse events reported?	Yes	No	No	No	Yes ²¹	No	No	No	Yes	No	No
19. Were the conclusions of the study supported by results?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Competing interests and sources of support											
20. Were both competing interests and sources of support for the study reported?	Partial	No	No	No	Partial	No	No	Yes	Yes	Partial	Partial

Abkürzungen: NA – Not applicable

¹⁹ Newly developed, non-validated survey.

²⁰ The IAT was only conducted before the session; after the session a survey using the iClicker Students Response system was used to evaluate the session.

²¹ 10% of the respondents reported that they had even more negative attitudes 4 months after the session.

1.3.4 Verzerrungspotential der Mixed-Methods-Studien

Tabelle A1-31: Bewertung des Verzerrungspotentials der Mixed-Methods-Studien (QuADS Criteria [61])

QuADS Criteria	Luig 2020 [53]	English 2023 [54]	Gajewski et al. 2023 [55]
1. Theoretical or conceptual underpinning to the research	0	1	2
2. Statement of research aim/s	3	3	3
3. Clear description of research setting and target population	3	1	2
4. The study design is appropriate to address the stated research aim/s	2	2	2Fehler! Textmarke nicht definiert.
5. Appropriate sampling to address the research aim/s	1	1	1
6. Rationale for choice of data collection tool/s	1	1	1
7. The format and content of data collection tool is appropriate to address the stated research aim/s	3	3	3
8. Description of data collection procedure	1	0	1
9. Recruitment data provided	3	2	2
10. Justification for analytic method selected	0	0	0
11. The method of analysis was appropriate to answer the research aim/s	3	2	2
12. Evidence that the research stakeholders have been considered in research design or conduct	2 ²²	2 ²³	1
13. Strengths and limitations critically discussed	3	2	3

0 = no information about the QuADS criteria reported in the study vs 3 = most detailed information about the QuADS criteria described in the study;
Detailed description of the QuADS criteria see [61]

²² The study was approved by the University of Alberta Health Research Ethics Board – Health Panel (Pro00058323).

²³ Ethics approval was granted from Dalhousie University Research Ethics Board.

1.3.5

Verzerrungspotential der qualitativen Studien

Tabelle 1-32: Bewertung des Verzerrungspotentials der qualitativen Studien (CASP Checkliste [62])

CASP Checklist for qualitative studies	Hales 2018 [56]	Fox 2023 [57]
1. Was there a clear statement of the aims of the research?	Yes	Yes
2. Is a qualitative methodology appropriate?	Yes	Yes
3. Was the research design appropriate to address the aims of the research?	Can't tell ²⁴	Can't tell ²⁴
4. Was the recruitment strategy appropriate to the aims of the research?	Can't tell ²⁵	Yes
5. Was the data collected in a way that addressed the research issue?	Yes	Can't tell
6. Has the relationship between researcher and participants been adequately considered?	No ²⁶	No ²⁶
7. Have ethical issues been taken into consideration?	Yes	No
8. Was the data analysis sufficiently rigorous?	No ²⁷	No ²⁷
9. Is there a clear statement of findings?	Can't tell ²⁸	Can't tell ²⁸
10. . How valuable is the research?	Yes	Yes

²⁴ The researcher did not justify the research design (e.g., they did not discuss how they decided on which method to use).

²⁵ Missing information about the recruitment strategy.

²⁶ It was not addressed if the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location, as well as, how the researcher responded to events during the study and whether they considered the implications of any changes in the research design.

²⁷ It is not clear to what extent contradictory data are taken into account and whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation.

²⁸ The researcher did not discuss the credibility of the findings (e.g. triangulation, respondent validation, more than one analyst).

1.4 Strategien der systematischen Literatursuche

1.4.1 Exemplarisches Beispiel: Medline

Database: Ovid MEDLINE(R) ALL <1946 to May 21, 2024>

Search Strategy:

-
- 1 exp Overweight/ (283240)
 - 2 over?weight*.mp. (98654)
 - 3 over-weight*.mp. (639)
 - 4 obes*.mp. (464401)
 - 5 exp Adiposity/ (15949)
 - 6 adipos*.mp. (191807)
 - 7 1 or 2 or 3 or 4 or 5 or 6 (607758)
 - 8 exp Weight Prejudice/ (265)
 - 9 ((weight* or anti?weight* or anti-weight* or anti?fat or anti-fat) adj3 (bias* or stigma* or prejudice* or discriminat* or attitude* or perception* or perceiv* or belief*)).mp. (6818)
 - 10 8 or 9 (6818)
 - 11 ((clinical or hospital or inpatient or outpatient or primary or surgery or surgeries) adj3 (setting* or environment* or sector* or centre* or center*)).mp. (291601)
 - 12 ((health or health?care or health-care or clinical or medical or dental or nursing or p?ediatric or psychiatric or practi#ing) adj3 (personnel or staff or professional* or practitioner* or provider* or worker* or specialist* or centre* or center* or setting* or sector*)).mp. (1050368)
 - 13 (physician* or doctor* or GP* or medic\$1 or surgeon* or nurse* or p?ediatr* or clinician* or therapist* or pathologist* or psycho?therapist* or psycho-therapist* or psychiatrist* or psychologist* or dentist* or dieti#ian* or HCP* or HCW* or internist* or nutritionist* or obstetrician* or psychiatrist* or radiologist* or optometrist* or pharmacist* or medical assistant* or midwi#e* or audiologist* or phlebotomist* or physio?therapist* or physio-therapist*).mp. (2753845)
 - 14 11 or 12 or 13 (3480323)
 - 15 7 and 10 and 14 (1092)
 - 16 limit 15 to yr="2014 - 2024" (851)
 - 17 remove duplicates from 16 (849)*****

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