The real cost
of beauty ideals

The staggering economic and social cost of body dissatisfaction
and appearance-based discrimination in the United States

Dove
Let's **Change** Beauty | **October 2022**

Contents

Glossary

ACRONYM	FULL NAME
BASS	Body Areas Satisfaction Subscale
BLS	Bureau of Labor Statistics
BMI	Body mass index
CDC	Centers for Disease Control
CPI	Consumer Price Index
CROWN	Creating a Respectful and Open World for Natural Hair
DALYs	Disability adjusted life years
GBD	Global Burden of Disease
GDP	Gross domestic product
MBSRQ	Multidimensional Body-Self Relations Questionnaire
NIEHS	National Institute of Environmental Health Sciences
OR	Odds ratio
PAF	Population attributable fraction
RR	Relative risk
UK	United Kingdom
US	United States
VSLY	Value of a statistical life year
WHO	World Health Organization
YLD	Years of healthy life lost due to disability
YLL	Years of life lost due to premature death

Definitions

TERM	DEFINITION
Harmful beauty ideals	Harmful beauty ideals are socially constructed notions of ideal beauty. Beauty ideals can vary significantly across the population (e.g., by age, gender, ethnicity, etc.), however, the most accepted beauty standards in the United States (US) tend to idealize predominantly white features and thinness. By imposing narrow standards of beauty, harmful beauty ideals create an unrealistic norm against which people compare their appearance and the appearance of others. In this report, 'harmful beauty ideals' is used interchangeably with 'idealized beauty'.
Body dissatisfaction	Body dissatisfaction is defined as having a severe negative attitude towards one's own physical appearance. It originates from a perceived discrepancy between an individual's ideal state of appearance (i.e., the beauty ideal) and their actual physical appearance.
Intersectionality	Refers to the way in which different aspects of a person's identity (such as race, gender, class, disability, sexuality and more) interact in overlapping forms of discrimination or disadvantage.
Appearance-based discrimination	The differential unfair or prejudicial treatment of someone on the basis of their appearance. This study considers appearance-based discrimination on the basis of three physical features: natural hair, skin shade and weight. However, we note that other forms of appearance-based discrimination exist (e.g., discrimination on the basis of one's height, physical disabilities, the shape of one's nose and mouth, the shape and size of one's breasts, among others). It should be acknowledged that beauty ideals, race and gender are intersectional, meaning that discrimination on the basis of appearance, race and gender intersect or overlap for marginalized communities. Many of the strongest influences on the development of body image are due to sociocultural factors such as gender, race, ethnicity, and sexual orientation.[1]
Natural hair discrimination	The unfair or prejudicial treatment of someone on the basis of natural hair texture and styles associated with the Black community. These textures are typically kinky and coily, and include afros, locs, and braids.

TERM	DEFINITION
Skin shade discrimination	The unfair or prejudicial treatment of someone on the basis of skin shade (or color). This is also referred to as colorism or shadeism, however the term 'skin shade discrimination' has been adopted throughout this study. This study costed skin shade discrimination for only the Black community in the US, as further research is required to understand its impacts within other racial groups.
Weight discrimination	The unfair or prejudicial treatment of someone on the basis of body weight. For the purpose of this study, an individual with a BMI over 30kg/m2 has been classified as having a 'high weight.'
Racial discrimination	The unfair or prejudicial treatment of someone on the basis of race or ethnicity. Note: Skin shade and hair type are observable, socially assigned indicators of race. Race therefore plays a key role in the discrimination of an individual on the basis of these features. In this study, the focus is on understanding how appearance-based discrimination differs for people of the same race, but with different skin shades and hairstyles, by relying on studies that controlled for race.

Note: This study doesn't consider discrimination based on gender identity.
For example, it doesn't account for the discrimination faced by transgender or nonbinary individuals who don't present within the traditional gender binary.

TERM	DEFINITION
Health system costs	
Medical services	Costs associated with the provision of medical services for health conditions/illnesses attributable to body dissatisfaction or appearance-based discrimination, such as inpatient and outpatient costs.
Pharmaceuticals	Costs associated with the provision of pharmaceuticals (i.e., prescription drugs) for health conditions/illnesses attributable to body dissatisfaction or appearance-based discrimination.
Productivity costs	
Absenteeism	Costs associated with increased absences from work due to a health condition developed as a result of body dissatisfaction or appearance-based discrimination.
Presenteeism	Lost productivity at work due to a health condition developed was a result of body dissatisfaction or appearance-based discrimination.
Informal care	Unpaid care provided to someone by a friend or family member, for a health condition developed as a result of body dissatisfaction or appearance-based discrimination.
Wage losses	Lost annual income due to appearance-based discrimination in employment and/or incarceration. Annual earnings are derived from median wages and fringe costs, by age group, gender, and race or ethnicity.
Reduced employment	Costs associated with the reduction in employment, or reduced participation in the labor-market, due to a health condition developed as a result of body dissatisfaction or appearance-based discrimination.
Other financial costs	
Efficiency losses	The reduction in economic efficiency associated with the need to levy additional taxation to fund the provision of services (e.g., additional healthcare) and recoup lost taxation revenue due to conditions attributable to body dissatisfaction or appearance-based discrimination. Efficiency losses are not the same as transfer payments, which represent a redistribution of money and are not real costs to society but instead reflect the reduction in economic efficiency associated with a suboptimal allocation of resources in the economy.
Non-financial or loss of well-being costs	
Years of healthy life lost due to disability (YLD)	Represents the reduction in quality of life due to conditions attributable to body dissatisfaction or appearance-based discrimination.
Years of life lost due to premature death (YLL)	Represents the years of life lost due to premature death due to conditions attributable to body dissatisfaction or appearance-based discrimination.

Acknowledgments

Preface

Authors: **S. Bryn Austin, ScD**
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The United Nation's 2030 Sustainable Development Goal 5 challenges all nations to achieve gender equality and empower girls and women. Reproductive health, gender-based violence, and economic opportunity are most often recognized as key domains in the struggle for gender equity. Each is understood to intersect with structural racism in profound ways. Noninclusive beauty ideals is another domain of life where gender inequities exist and intersect with structural racism; yet, this domain has received far less attention from scientists, research funders, and government leaders than have reproductive health, gender-based violence, and economic opportunity. **With this report, we take aim at racist and gendered societal appearance ideals,** bringing much-needed scrutiny to a domain of inequity that for too long has been relegated to the periphery of economic and social inquiry, no doubt both a consequence and a cause of the comparatively small research literature investigating this domain.

This report was conceived through a collaboration of the Dove Self-Esteem Project (DSEP) and the Harvard University-based Strategic Training Initiative for the Prevention of Eating Disorders: A Public Health Incubator (STRIPED). The findings reported here were generated by a diverse team of economists with Deloitte Access Economics consulting firm, expert input from

DSEP, and an international scientific advisory panel led by STRIPED. At the start of our study, we set out to uncover all that could be learned from the existing research literature and available data sources to quantify the psychological, health, and economic costs of racist and gendered societal appearance ideals in the United States. We distilled the extant science base into two hypothesized pathways:

1) body dissatisfaction, an intrapsychic phenomenon that is heavily influenced by the messages about and experiences of social hierarchies in the world around us; and
2) appearance-based discrimination – specifically, discrimination based on body size, skin shade, and natural hair texture and style - which is interpersonally and structurally mediated injustice enacted in education, employment, healthcare, and a myriad of other settings.

In both cases, these pathways disproportionately target girls and women, though all genders are impacted, and both have their historical roots and contemporary power in white supremacy and patriarchy. Black, indigenous, and other people of color (BIPOC) communities are each targeted by skin shade discrimination, while natural hairstyle discrimination is most often directed against Black girls and women. Yet again, all genders are affected.

Simply put, our findings on the costs of these twin pathways of harm, suffering, and injustice are astronomical: Each year in the United States, body dissatisfaction incurs $84 billion in financial costs, with an additional $221 billion in loss of well-being; and appearance-based discrimination incurs $269 billion in financial

costs, with an additional $233 billion in well-being losses. Nearly one-third of the financial costs of body dissatisfaction are borne by individuals and families (32%) and government (29%), while employers also pick up a sizable portion of the tab (14%). Our investigation indicates that the impact of appearance-based discrimination is even more profound, affecting most arenas of life and work, from unfair healthcare barriers, wage losses, and diminished employment and education to incarceration. For weight discrimination, each year the financial costs amount to $206 billion and well-being losses to $224 billion; for skin-shade discrimination, the corresponding financial costs reached $63 billion and well-being losses $8 billion. In 2019, the financial cost of appearance-based discrimination was 1.3% of US gross domestic product (GDP). Expressed in current dollars, the costs of body dissatisfaction and appearance-based discrimination would be even higher, with inflation averaging 3.9% per annum between 2019 and 2022. Our report represents the most comprehensive assessment ever conducted on the pervasive and pernicious impact of body dissatisfaction and appearance-based discrimination on the U.S. economy and society.

While we gained a clearer understanding of the historical roots and pervasiveness of racist and gendered societal appearance ideals in U.S

society, we found that the depth and breadth of research literature and data sources documenting their impact fell short in several disappointing ways. We were not completely surprised by this finding, given the historical and enduring marginalization of research by and about BIPOC and gender-diverse communities. Yet we reject the idea that this knowledge gap in the science is indelible, and we challenge funding organizations and the scientific community to close the gap by supporting scholars whose work focuses on gendered and racist societal appearance ideals, especially those from BIPOC and gender-diverse communities.

Here are just a few examples of limitations of our report:

• Scientists have developed many different measures of body dissatisfaction derived from varying conceptualizations of the construct and focusing on different aspects of the physical body, which vary in salience in part as a function of societal ideals and social group identity. While the research to date has been rich and illuminating, the lack of consistency in measurement complicated our comparisons across studies, population groups, and contexts and impeded our efforts to comprehensively quantify the social and economic costs of body dissatisfaction for society as a whole.

• Skin shade discrimination or colorism in the United States adversely affects all BIPOC communities, yet to date, research has primarily concentrated on the impacts on Black Americans. The sparse literature on Indigenous, Latino/a/e, and Asian ethnic communities in the United States resulted in our team having sufficient data to base estimates of the economic impact of skin shade discrimination for only Black Americans.

- Discrimination based on natural hairstyles is widely documented in the news media and well-characterized in social sciences. Still, pertinent economic research on this form of discrimination lags far behind, thus precluding analysis of its economic impact.

- Likewise, the adverse effects of appearance-based discrimination and body dissatisfaction for transgender and gender nonbinary communities in the United States are widely documented in the news media and are increasingly being studied in the social sciences, but the requisite economic studies to inform our comprehensive analyses of the economic impact are lacking.

We strongly encourage research scientists to pay heed to the gaps in the literature described above and other limitations we identify in our full report, where the breadth or depth of our findings have been constrained by the dearth of pertinent research. In addition, we urge the nation's preeminent funding organizations in government and foundation sectors, including the National Institutes of Health, National Science Foundation, Robert Wood Johnson Foundation, and others, to dedicate funding to support new studies and research scholars to redress these deficiencies in the science base and illuminate promising policy and program intervention strategies to eliminate appearance-based discrimination and promote body confidence and well-being. Our goal in undertaking this report was not to produce a final definitive assessment of the devastating economic and social cost of harmful societal appear-

ance-based ideals. Rather, our goal is to inspire a new generation of scholarship and federal and foundation research funding, building on the insights of all the pioneering scientists whose work served as the basis for our report. We aimed to synthesize what is known, illuminate what is not yet known, and motivate scholars and funders to pick up where our report leaves off.

For some of our readers, our findings may be illuminating and shocking. For others, they may simply underscore with novel data what was already well known or experienced by them directly. Whether our findings are astounding, infuriating, or validating, we hope for all our readers that this report inspires action to design new studies, launch new research funding opportunities, and initiate new policies and programs to redress the staggering economic and social costs of body dissatisfaction and appearance-based discrimination.

Foreword

Author: **Alessandro Manfredi**,
Dove Global Chief Marketing Officer

Women and girls are inundated with harmful messages about their appearance every day – whether it's in the form of toxic beauty advice on social media or unrealistic representations of beauty on a billboard – it can have a negative impact on their body confidence and self-esteem. At Dove, we are on a mission to make a positive experience of beauty accessible to all. This is why we partnered with Deloitte Access Economics and Dr. S. Bryn Austin, Founding Director of the Strategic Training Initiative for the Prevention of Eating Disorders (STRIPED): A Public Health Incubator at the Harvard T.H. Chan School of Public Health on *The Real Cost of Beauty Ideals r*eport. Together, we uncovered the massive economic toll of **$305 billion** through body dissatisfaction and **$501 billion** through appearance-based discrimination that harmful beauty ideals impose upon the US economy each year.

The scale of the issues we face is beyond imagination, and we have seen first-hand how discrimination exacts a terrible price. *The Real Cost of Beauty Ideals* report found the financial costs of appearance-based discrimination totaled $269 billion in 2019 — close to 1.3% of US GDP. In addition, the loss of well-being from appearance-based discrimination was estimated to be $233 billion. It's a human problem, impacting 66 million individuals aged 10 years or older, of whom it was estimated that 34 million faced weight discrimination, 27 million faced skin tone discrimination, and 5 million faced natural hair discrimination. It's critical to remember that these 66 million lives encountering appearance-

based discrimination face poorer health outcomes, labor market outcomes, educational outcomes, and discriminatory incarceration. Moreover, body dissatisfaction and appearance-based discrimination can lead to severe outcomes like depression, anxiety, eating disorders and even suicide – all of which have been exacerbated by the global COVID-19 pandemic and economic inflation. This report highlights the true impact of harmful beauty ideals – and the findings reveal that body dissatisfaction and appearance-based discrimination are a public health crisis. Illuminating that the impact is worse for women and girls – body dissatisfaction endangers more girls than toxic substances (underage alcohol abuse, smoking cigarettes, and illegal drug abuse).

Since Dove launched the Campaign for Real Beauty nearly two decades ago – inspired sadly by the insight that just 2% of women describe themselves as "beautiful" – Dove is deeply committed to changing beauty for the better by addressing harmful ideals that have an adverse effect on self-esteem, mental wellness, and even ideals that limit access to employment and educational opportunities. Our work includes showing a more diverse representation of beauty, zero digital distortion, investing in young people to build and nurture their self-esteem, and championing legislation to end race-based hair discrimination in the workplace and in schools. Dove's actions have taken many different forms.

- In 2004, we started the **Dove Self-Esteem Project**, the largest provider of body confidence education in the world. We have reached 82 million kids across 150 countries with our no-cost, academically validated resources to-date, and are on track to positively impact the body confidence and self-esteem in 250 million young people by 2030.

- Dove co-founded The CROWN Coalition in 2018 with partners such as such as the National Urban League, Color Of Change, and Western Center on Law & Poverty to 'Create a Respectful and Open World for Natural Hair,' and will continue to support The CROWN Act until race-based hair discrimination in workplaces and schools is illegal across the United States. To date, the CROWN Act is law in 18 US states and has passed in the US House of Representatives.

- Through Project **#ShowUs**, Dove created the first-ever global collection of inclusive beauty images for media and advertisers to use. Since launching in 2019, we've grown the bank to over 16,000 images, and more than 7,627 companies across 39 countries have used images from the bank to help us redefine beauty in media and advertising. Also in 2018, we deepened our commitment to ensuring women are portrayed with **#NoDigitalDistortion,** and a pledge to create a more positive experience for the next generation on social media.

Our work over the years has taught us that we can't solve the problem if we don't know the scale of the challenge.

That's why this report is such a vital contribution to the current conversations around beauty – and hopefully, a catalyst for change.

This study demonstrates that the cost of harmful beauty standards is not only measured in happiness and health, but also in losses of dollars and cents. We hope it will serve as a call to action to reprogram our learned behaviors and denounce harmful beauty ideals, ensuring the world the next generation enters is one where all forms of beauty are seen, respected and celebrated. **Simply, we can't continue to ignore the price we're paying for harmful beauty ideals.**

While we cannot make broad change alone, The Dove Self-Esteem Project is committed to working alongside likeminded individuals, experts, and organizations to change beauty for the next generation. This means providing continued support for a multi-channel, long term approach to disarming the complex influences that lead to both body dissatisfaction and appearance-based discrimination that erode the self-esteem of kids and teens.

Change doesn't happen overnight, but we must do our part to drive awareness for issues impacting young people through our platforms and campaigns, while also identifying small actions we can all take that can lead to big results in the future. These actions can come in the form of:

- **Education & Mentorship:** Support academically validated body-confidence education in schools and talk to young people in your life about body image and anxieties they may have about their appearance. Download no-cost, confidence-building resources at dove.com/selfesteem.

- **Supporting Inclusive, Diverse & Authentic Images in Media:** Challenge companies, TV shows, films and advertisers that perpetuate narrow beauty standards. Media and ad industry leaders can promote authenticity by supporting diverse imagery in advertising like the Project #ShowUs photography bank. We also encourage consumers to purchase products from brands that celebrate diversity.

- **Helping Young People Curate Positive Social Media Feeds:** When you allow your teen to sign up for a social media account, take time to help them identify positive accounts to follow, which can help ensure a positive algorithm. For teens who are already on social media, empower them to unfollow or mute posts, videos or accounts that makes them feel bad about themselves. Additionally, adults can demand popular platforms hold safe spaces for kids online, including a safety and awareness checklist at sign-on requirement. Learn more about how to help teens detox their feed at dove.com/detoxify.

- **Advocating on a legislative level:** Advocate at the state and municipal level to action legislation that protects people from discrimination based on weight, skin tone and hair. The data in this report is currently being used to support state legislation around body size discrimination, which is presently legal in 49 US states. You can write your local legislators about these issues to advocate for change. You can also join our mission to make race-based hair discrimination illegal by supporting the CROWN Act in states where legislation has not passed – visit Dove.com/CROWN for updates.

Together, we have an obligation to take action to create a world where beauty is a positive experience for everyone.

Visit Dove.com/costofbeauty for more information and join us on our mission to change beauty.

Sincerely,

Alessandro

Beauty ideals are socially constructed notions of ideal beauty. The report explores the impacts and costs of harmful beauty ideals through the dual pathways of **body dissatisfaction** and **appearance-based discrimination**.
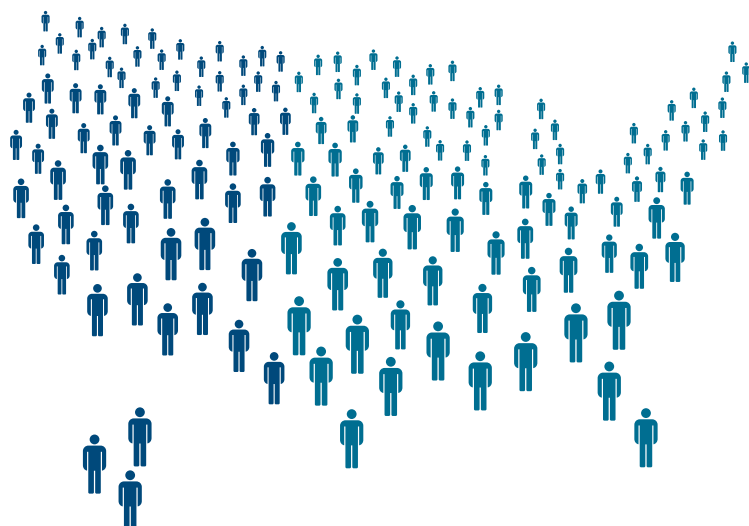
In 2019, there were:

66 million
People affected by **appearance-based discrimination**

45 million
People affected by **body dissatisfaction**

COST TYPES

Financial costs

Non-financial costs

Health costs
Medical services, pharmaceuticals

Productivity costs
Reduced employment, absenteeism, presenteeism, wage losses and informal care

Other costs
Efficiency losses, prison expenditure, societal impact of wage losses

Loss of well-being
Years of life lost and years lived with a disability

APPEARANCE-BASED DISCRIMINATION

Appearance-based discrimination is defined as the unjust, prejudicial treatment of somebody purely on the basis of their appearance.

$269 billion in financial costs

$233 billion in lost well-being

Weight discrimination affected **34 million** people and cost **$206 billion.**

Skin shade discrimination affected **27 million people** in the Black community and cost **$63 billion.**

Natural hair discrimination affected **5 million people** in the Black community (not costed)

BODY DISSATISFACTION

Body dissatisfaction is defined as having a severe and persistent negative attitude towards one's own physical appearance, which has been caused by harmful beauty ideals.

$84 billion in financial costs

$221 billion in lost well-being

▸ Beyond the immediate economic benefits, eliminating harmful beauty ideals could also greatly improve societal well-being more broadly.

Executive Summary

There is a need for multi-level interventions to address harmful beauty ideals in the United States, which cost the economy **$305 billion** through body dissatisfaction and **$501 billion** through appearance-based discrimination in 2019.

Beauty ideals are socially constructed notions of ideal beauty. They are communicated through media, film, family, and other sociocultural channels, creating a culturally accepted norm of what makes someone beautiful.

In the United States (US), the most accepted beauty norms reflect white standards. The lack of diversity in body shapes, sizes, ages, abilities, hair types, and skin shades of people shown in the media sets a narrow and unrealistic beauty standard that is difficult (if not impossible) for most to attain.

This has a profound impact on the way people think and feel about themselves and the people around them. Yet, we still do not have a good understanding of the impacts that are attributable to harmful beauty ideals, nor the associated economic costs.

Dove has made a commitment to portraying real and diverse beauty in all of its advertising since 2004. The Dove Self-Esteem Project, the educational arm of Dove, was established in 2004 to help the next generation develop a healthy relationship with the way they look, so they are not held back by appearance-related

anxiety and can realize their full potential. Dove commissioned Deloitte Access Economics to estimate the economic and social cost of harmful beauty ideals, for people aged 10 years and older in the US in 2019.[ii] To our knowledge, this is the first study to attempt to cost harmful beauty ideals and holistically identify the associated impacts.

> **BOX I: DEFINITIONS**
>
> **BODY DISSATISFACTION is defined as** having a severe and persistent negative attitude towards one's own physical appearance, which has been caused by harmful beauty ideals. It originates from a perceived discrepancy between an individual's ideal state of appearance (i.e., the beauty ideal) and their actual physical appearance.
>
> **APPEARANCE-BASED DISCRIMINATION is defined as the unjust, prejudicial** treatment of somebody purely on the basis of their appearance. Appearance-based discrimination can be based on any physical feature of a person. The three types of appearance-based discrimination considered in this study include <u>weight discrimination, skin shade discrimination, and natural hair discrimination</u> (see Definitions for further details).

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ii The calendar year of 2019 was chosen to enable us to calculate the costs of harmful beauty ideals while avoiding any impacts caused by the COVID-19 pandemic. All costs in this report are in United States dollars ($USD).

This report explores the impacts of harmful beauty ideals through the dual pathways of body dissatisfaction and appearance-based discrimination. Put simply, appearance-based discrimination describes how beauty ideals change the way we treat others while body dissatisfaction indicates how beauty ideals can change the ways we think and feel about ourselves.

Importantly, this study focuses on understanding how appearance-based discrimination differs for people of the same race or gender but with different physical characteristics such as hair type, skin shade and weight. However, it is noted that skin shade and hair type are observable, socially assigned indicators of race, and race therefore plays a key role in the discrimination of an individual on the basis of these features. Furthermore, appearance-based discrimination is driven by white standards of beauty, which means people with pre-dominantly white features such as light skin shades or straight hair are systematically and structurally privileged, while darker skin shades tend to be devalued.

This report conservatively estimates that as much as 16% of the US population aged 10 years or older – reflecting **45 million people** – experienced body dissatisfaction in the US in 2019. People who experienced body dissatisfaction faced poorer health outcomes, reduced engagement across social circles, school and work, and engaged in risky behaviours. This estimate is likely conservative[iii] and focuses on individuals with severe and persistent experiences of body dissatisfaction, resulting in an array of serious impacts such as depression, anxiety, eating disorders, illicit drug use, among others.

Furthermore, as many as **66 million people**[iv] in the US aged 10 years or older experienced appearance-based discrimination in 2019. This includes anyone who experienced discrimination based on their skin shade, weight or natural hair styles but does not include those who experienced other forms of appearance-based discrimination (such as height discrimination). Of the 66 million, it was estimated that **34 million faced weight discrimination, 27 million faced skin tone discrimination, and 5 million faced natural hair discrimination**. For the purposes of the calculations in this report, it was assumed that someone could be counted towards only one form of discrimination. However, this is not necessarily reflective of the true experiences of people facing discrimination. People who experienced appearance-based discrimination faced poorer health outcomes, labour market outcomes, educational outcomes and discriminatory incarceration.

To estimate the costs of harmful beauty ideals, this report adopted a prevalence approach, where costs are estimated for specific outcomes that are attributable (such as depression, eating disorders, anxiety, etc.) and applied to the proportion of the population that faces these outcomes due to body dissatisfaction or appearance-based discrimination. These costs have been estimated based on the prevalence of body dissatisfaction and appearance-based discrimination for people aged 10 years and older in the US.

iii For example, in a critical evaluation of research examining the population prevalence of body dissatisfaction among US adults, Fiske et al. (2014) found that estimates of body dissatisfaction varied between 11–72% for women and between 8%–61% for men.

iv This estimate does not reflect the number of people who also face appearance-based discrimination on the basis of other physical features such as the shape of one's nose and mouth, the shape and size of one's breasts, height, and physical disabilities. Including all forms of discrimination for all groups who experience it would likely result in a far larger estimate of prevalence.

Modelling for this report found the financial costs of body dissatisfaction in the US was $84 billion in 2019, equivalent to 0.4% of total US gross domestic product (GDP) each year. While the financial and economic costs are substantial, they do not tell the full story. There is also a considerable impact on quality of life. Loss of well-being or non-financial costs from body dissatisfaction were estimated to be $221 billion in 2019.

These costs are bigger still for appearance-based discrimination, with the financial costs totalling $269 billion in 2019 or close to 1.3% of US GDP. In addition, the loss of well-being from appearance-based discrimination was estimated to be $233 billion. Weight discrimination was responsible for $206 billion of the financial costs attributable to appearance-based discrimination, while skin shade discrimination was responsible for $63 billion.

For both body dissatisfaction and appearance-based discrimination, women bore the majority of costs (58% or $177 billion and 63% or $317 billion respectively.).

For context, the financial costs of body dissatisfaction would cover tuition, fees, room and board costs for 2.9 million college students in the US for one academic year,[v] reflecting 17% of all students enrolled in a postsecondary institution in 2019.[1,2] The financial costs of appearance-based discrimination would cover two-thirds (66%) of the total national out-of-pocket spending on healthcare in the US (estimated to be $406.5 billion in 2019).[3]

Collectively, the combined financial and well-being costs was $305 billion for body dissatisfaction and $501 billion for appearance-based discrimination.

COST OF APPEARANCE-BASED DISCRIMINATION
IN 2019

$269 billion financial costs

$233 billion non- financial costs

COST OF BODY DISSATISFACTION
IN 2019

$84 billion financial costs

$221 billion non- financial costs

▶ **Beyond the immediate economic benefits, eliminating harmful beauty ideals could also greatly improve societal well-being more broadly.**

v Based on average costs in a four-year institution in the United States.

While the costs of appearance-based discrimination and body dissatisfaction can be considered collectively, they cannot be summed. This is due to likely crossovers between the pathways themselves. For example, some people who face appearancebased discrimination or stigma might internalize these experiences and subsequently be dissatisfied with their appearances, creating an overlap with body dissatisfaction.[vi]

Given the indicative costs of body dissatisfaction and appearance-based discrimination on individuals, government and broader society, there is a need for multi-level interventions to address harmful beauty ideals. Beyond the immediate economic benefits associated with reducing healthcare costs and improving productive output, initiatives aimed at encouraging body confidence and reducing bias, underpinned by research, have the potential to greatly improve societal well-being more broadly.

There are a range of evidence-backed interventions that could help to address harmful beauty ideals such as promoting safer digital spaces, encouraging diversity in advertising, regulating the sale of harmful products, tax incentives and laws to end appearance-based discrimination, education at schools to promote body confidence, mental health support services, and social media literacy, among others.

Of course, a key starting place to address harmful beauty ideals is to ensure that initiatives are backed by robust research and to deepen our understanding of harmful beauty ideals more broadly. This report identifies a range of limitations in the existing literature, summarized in Box ii (next page).[vii]

vi For example, it is estimated that approximately 44% of adults in the US might be internalizing weight bias, which captures the negative perception one feels towards themselves because of weight stereotypes in society.
vii Further detail is provided in Chapter 6.

BOX II: BUILDING THE EVIDENCE-BASE AROUND HARMFUL BEAUTY IDEALS

- Further research is needed around specific forms of appearance-based discrimination that were not quantified (e.g., hair discrimination) or which were not included in this report (e.g., height discrimination, discrimination against people with visible disabilities, etc.), to better understand their impacts and costs. Furthermore, it would be valuable to gain a better understanding of the intersectionality between different forms of appearance-based discrimination, for example, experiencing both skin shade and hair discrimination.

- The majority of research in the US of skin shade discrimination is focused on the Black community. More research is needed to understand the prevalence and impacts of skin shade discrimination for other communities of color, for whom this form of discrimination is also likely to be relevant.

- There are also many different definitions of body dissatisfaction in the literature, and different ways it is measured. Adopting a consistent definition and measure of body dissatisfaction would help enable comparisons to be made across studies and improve the quality of research.

- Certain impacts in this report were discussed qualitatively and as such their costs are not well understood. For body dissatisfaction this includes certain behavioral disorders, low self-esteem, risky sexual behavior, worse educational outcomes and professional engagement, alongside the use of risky cosmetic products and procedures. For appearance-based discrimination, this includes employment and health outcomes associated with discrimination.

- More research is needed to inform estimates of the financial and non-financial costs of body dissatisfaction and appearance-based discrimination experienced by transgender and gender nonbinary communities in the US. Body dissatisfaction and weight, skin shade, and hair discrimination affect transgender and gender nonbinary communities, but how these experiences are patterned by age, sex assigned at birth, and other important factors is not yet known. In addition, discrimination targeting transgender and gender nonbinary communities for their gender expression is widespread and likely to profoundly affect employment and other economic indicators, but more research is needed to help inform costing analyzes like those presented in this report for cisgender women and men.

- Some of the studies used in this report were based on non-US samples and, as a result, lack generalizability to the US population. For example, the odds ratio adopted for anxiety is based on an Irish sample. To obtain more precise estimates, more US-specific research is needed. Further, for some of the impacts that were costed, the estimates could be improved. For example, the odds ratio for eating disorders for men was based on disordered eating behaviors as opposed to clinically diagnosed eating disorders.

- For outcomes related to skin shade and hair discrimination, controls for race were carefully considered to understand how appearance-based discrimination differs for people of the same race, but with different skin shades and hair types. However, more work is needed to enable researchers to further disentangle the effects of appearance-based discrimination from other forms of racial and gender discrimination and identify the incremental costs.

1 Introduction.

The report explores the impacts and costs of harmful beauty ideals through two pathways:

BODY DISSATISFACTION

APPEARANCE-BASED DISCRIMINATION

1 Introduction

Beauty ideals are socially constructed notions of optimal physical attractiveness. They can exist for a combination of physical features of the human body, such as facial features, hair, weight, height, body shape and skin shade, among others.

There is no one definition of the ideal standard of beauty. Indeed, beauty ideals can vary by age, gender, race or ethnic group and even personal preference. They can also evolve over time. What was once idealized fifty years ago may no longer be idealized today.

Yet, regardless of how the beauty ideal is defined, the fact that it exists is problematic. This is because beauty ideals inherently represent only a fraction of the population. For most people, realizing these ideals would not be possible without significant time, money, and resources, and even then, may still remain out of reach.

By imposing narrow and unrealistic standards of beauty, harmful beauty ideals create a norm against which people compare their appearance and the appearance of others. Pressure to meet these standards can lead to a range of negative impacts. Some individuals may become dissatisfied with their appearance, while others may be discriminated against because they do not meet society's ideals of what it means to be beautiful.

Dove has made a commitment to portraying real and diverse beauty in all of its advertising since 2004. The Dove Self-Esteem Project, the educational arm of Dove, was established in 2004 to help the next generation develop a healthy relationship with the way they look, so they are not held back by appearancerelated anxiety and can realize their full potential. As part of the development of a program of evidence-based resources, Dove commissioned Deloitte Access Economics to estimate the economic and social cost of harmful beauty ideals in the US for people aged 10 years and older.

To our knowledge, this is the first report to holistically consider a wide range of impacts associated with harmful beauty ideals and attempt to estimate attributable costs. In doing so, this report aims to shed light on the severity of the issue while highlighting the need for interventions to address the underlying cause.

1.1 How are beauty ideals created?

Harmful beauty ideals are created and communicated through several different sociocultural channels. Media is one of the key channels through which beauty ideals are conveyed and reinforced. This can include both digital forms of media (such as social media) alongside traditional formats (such as TV and newspapers). Beauty ideals portrayed in the media are typically not representative of the average person in US society. These ideals have been further distorted by the rise of body-altering apps. For example, based on findings from a survey of 175 women or nonbinary people aged 18–30 in the UK, Gill (2021) found that approximately 90% use a filter or edit their photos before posting online.[4]

Media use in the US is growing. On average, people in the US spent just over 11 hours on average consuming media (both traditional and digital formats) every day in 2011. In 2019, this had increased to 12.5 hours – and is expected to continue to grow.[5]

Increasing use of media means people are more exposed than ever before to unrealistic beauty ideals. This is particularly concerning for younger generations, who are the highest users of digital media.[6] Indeed, research has found that girls who regularly share photos of themselves online are significantly more likely to internalize societal beauty ideals and critically evaluate their shape and weight, relative to those who do not.[7]

In addition to media, family and peers can also influence the propagation of beauty ideals. Peers and family can convey harmful body ideals both directly (for example, through comments about weight, shape, skin tone or hair styles), or indirectly (for example, by modeling dieting behavior). Certain products such as skin bleach used by Black girls and women to lighten their skin can also reinforce beauty ideals.

1.1.1 Beauty ideals, race and gender

It should be acknowledged that beauty ideals, race and gender are intersectional. Indeed, most researchers agree that the strongest influences on the development of body image are sociocultural factors such as gender, race, ethnicity, sexual orientation, among others.[8]

In the US, the most accepted norms reflect white beauty standards. While other racial groups may have a different set of norms, they are often still subjected to white standards in the US. This reflects the underlying discourses of race and power in societies in which the racial group with institutional and social privilege makes their racial features the norm.[9] Similarly, beauty norms can reinforce existing inequalities between men and women. Some researchers suggest beauty norms are used as a tool to oppress women, by basing women's value in society on how conventionally attractive they are.[10]

The impacts of normative beauty ideals are not just felt within the US. In a study of more than 3,000 women across 10 countries, 90% said they wanted to change at least one aspect of their physical appearance, suggesting this is a global phenomenon.[11] Importantly, this does not mean beauty standards themselves are the same but can vary significantly across cultural and historical boundaries. This variation is important because it demonstrates that beauty ideals are socially constructed.

Because they are socially constructed, normative beauty ideals can perpetuate disadvantages already faced by particular groups in the US.[12] For example, people with predominantly white features such as lighter skin shades and straight hair are systematically and structurally privileged, while darker skin shades or natural hair styles tend to be devalued.[13]

1.2 Impacts of harmful beauty ideals

Beauty ideals that are internalized can cause harm through two distinct pathways:

- beauty ideals can cause someone to judge their own appearance negatively, **leading to body dissatisfaction**.[14 15 16]
- beauty ideals can also change the way people view others based on their appearance, **leading to appearance-based discrimination**.

This report explores the impacts of harmful beauty ideals through these two pathways (see Figure 1.1).

Figure 1.1: **Framework for understanding how harmful beauty ideals manifest and impact society**

Harmful beauty ideals

Sociocultural channels

MEDIA

PEERS AND FAMILY

EDUCATION

OTHERS

Internalization of beauty ideals

- Judgment of one's own appearance
- Bias formation based on others' appearance

Impacts of harmful beauty ideals

- Body dissatisfaction
- Appearance-based discrimination
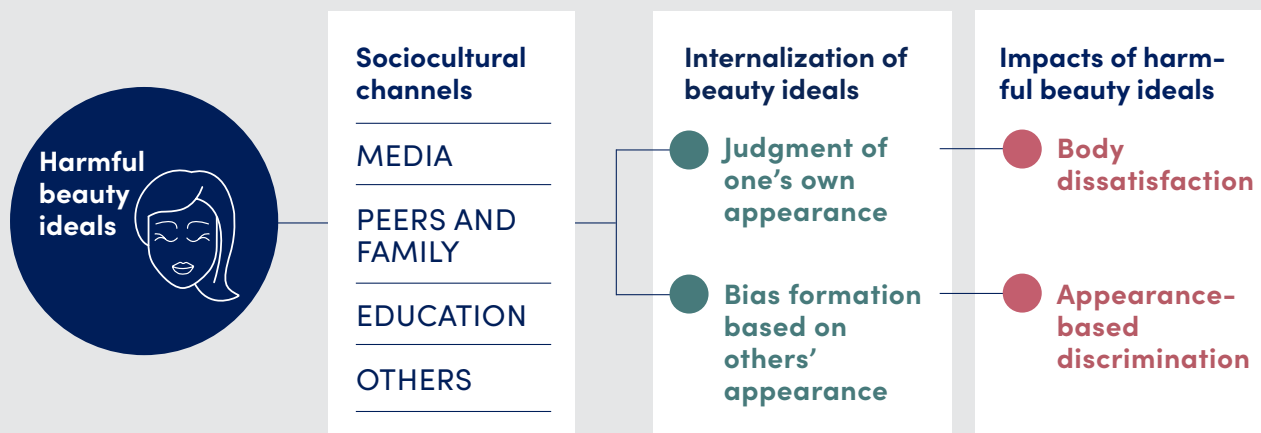
Source: Deloitte Access Economics.

The definitions of body dissatisfaction and appearance-based discrimination are provided in Box 1.1.

BOX 1.1: DEFINITIONS

- **BODY DISSATISFACTION is defined as having a severe and persistent negative attitude towards one's own physical appearance, which has been caused by harmful beauty ideals. It originates from a perceived discrepancy between an individual's ideal state of appearance (i.e., the beauty ideal), and their actual physical appearance.**

- **APPEARANCE-BASED DISCRIMINATION is defined as the unjust, prejudicial treatment of somebody purely on the basis of their appearance. Appearance-based discrimination can be based on any physical feature of a person. This can occur in a number of different settings including in education, employment and in the provision of government or other services, such as healthcare. The three types of appearance-based discrimination considered in this study include weight discrimination, skin shade discrimination, and natural hair discrimination (see Definitions for further details).**

It should be noted that while the costs of appearance-based discrimination and body dissatisfaction can be considered collectively, they cannot be summed. This is due to likely crossovers between the pathways themselves. For example, some people who face appearance-based discrimination or stigma might internalize these experiences and subsequently be dissatisfied with their appearances, creating an overlap with body dissatisfaction.[viii] This in turn leads to personal and societal costs.

1.3 This report

The remainder of this report is structured as follows:

- **Chapter 2** provides an overview of the approach taken to cost harmful beauty ideals, covering the method framework, prevalence, impacts, cost types, cost estimation method, and the method limitations

- **Chapter 3** details the prevalence of body dissatisfaction and appearance-based discrimination

- **Chapter 4** details the impacts and estimated costs of body dissatisfaction in 2019

- **Chapter 5** details the impacts and estimated costs of appearance-based discrimination in 2019

- **Chapter 6** provides a discussion of the main findings of this report, their implications, and recommends a number of areas for future research.

viii For example, it is estimated that approximately 44% of adults in the US might be internalizing weight bias, which captures the negative perception one feels towards themselves because of weight stereotypes in society

2 Approach.

Harmful beauty ideals were costed using a prevalence approach, where costs of impacts were applied to the population facing the impacts.

2 Approach

The costs of harmful beauty ideals were estimated for the pathways of body dissatisfaction and appearance-based discrimination using a prevalence approach. At a high-level, this involves identifying the costs associated with the impacts of each pathway and applying them to the proportion of the population that faces these due to body dissatisfaction or appearance-based discrimination.

Two approaches were used to attribute costs:

- For most impacts, costs were attributed to body dissatisfaction or appearance-based discrimination by applying the **population attributable fraction** (PAF) to the total costs associated with an impact (such as depression, anxiety, etc.). The PAF represents the proportional reduction in population disease or mortality that would occur if exposure to beauty ideals (either from body dissatisfaction or appearance-based discrimination) were reduced to zero.

- However, for appearance-based discrimination only, some costs were estimated using an **outcome approach**. This involved comparing specific outcomes for people impacted by appearance-based discrimination to those that are not and applying the gap between the two groups to the total number of people facing appearance-based discrimination. This method was used to quantify wage and employment losses attributable to labor market outcomes and discriminatory incarceration.

The cost framework for this study is illustrated in Figure 2.1.
Further detail on cost estimation is provided in the sections following.

Figure 2.1: **Overall cost framework**

| PATHWAYS | PREVALENCE | DISCRIMINATORY OUTCOMES AND QUANTIFIABLE IMPACTS | ECONOMIC COSTS |

Body dissatisfaction

Number of people who report being body dissatisfied, by gender and age

IMPACTS
- Depression
- Eating disorders
- Smoking
- Suicide attempts
- Anxiety
- Alcohol and drug abuse

Financial costs:
- Health system costs
- Productivity losses
- Efficiency losses

Non-financial costs:
- Loss of well-being

x

Population attributable fraction

+

Labor market cost:
- Wage gap
- Employment gap

x

Wage losses

Cost of body dissatisfaction

=

Cost of appearance-based discrimination

Appearance-based discrimination

Number of people experiencing:
- Weight discrimination
- Skin shade discrimination
- Hair discrimination

OUTCOMES
- Poorer labor market outcomes
- Discriminatory incarceration

IMPACTS
- Depression
- Anxiety
- Drug abuse
- Smoking
- Obesity
- Hypertension

Source: Deloitte Access Economics.

While the costs of appearance-based discrimination and body dissatisfaction should be considered collectively, they cannot be summed. This is due to likely crossovers between the pathways themselves. For example, some people who face appearancebased discrimination or stigma might internalize these experiences and subsequently be dissatisfied with their appearances, creating an overlap with body dissatisfaction.[ix] This in turn leads to personal and societal costs.

The following sections detail the various components of the methodology used to cost harmful beauty ideals. Further detail on the costing methodology and sensitivity analysis are provided in Appendix A and B respectively.

ix For example, it is estimated that approximately 44% of adults in the US might be internalizing weight bias, which captures the negative perception one feels towards themselves because of weight stereotypes in society.

Furthermore, as part of this project, Edelman USA facilitated 11 interviews with people in the US who had experienced body dissatisfaction and/or appearance-based discrimination. Each interview sought to understand the impact of harmful beauty ideals on the individual, their families, and society more broadly. Interviewees were selected to capture a broad range of experiences (across different types of appearance-based discrimination and body dissatisfaction), for people of different ages, genders, and races/ethnicities.

Interviews were provided to Deloitte to be synthesized in the report. These case studies have been integrated throughout the report to help demonstrate the lived experience of body dissatisfaction and appearance-based discrimination, particularly for those areas where the empirical evidence was not as well established (e.g., hair discrimination) or where evidence was only available for particular groups in US society. All names in the case studies have been changed for anonymity.

2.1 Prevalence

Prevalence estimates for body dissatisfaction and appearancebased discrimination were drawn from nationally representative prevalence studies identified through a systematic literature review (see Appendix A). Population data for both pathways was derived from the Bureau of Labor Statistics (BLS) and the Centers for Disease Control and Prevention (CDC) as relevant. Estimates for body dissatisfaction were drawn from Fallon et al. (2014),[17] which sampled roughly 2,000 adults in the US. These estimates were adjusted for age differentials and applied to the age-sex population in 2019

to arrive at the one-year prevalence among the population aged 10 years or older.

Estimates for appearance-based discrimination were calculated by aggregating the prevalence of weight, skin shade, and natural hair discrimination. Skin shade, weight, and hair type have been considered because they are some of the most common forms of appearance-based discrimination occurring in the US, with a large body of empirical evidence surrounding their impacts. However, appearance-based discrimination is in no way restricted to these forms.[x] Further work is needed to understand the costs attributable to other forms of appearance-based discrimination not included in this study.

Further detail on the prevalence of body dissatisfaction and appearance-based discrimination is provided in Chapter 3.

x For example, some literature looks at the impacts associated with being perceived as simply 'unattractive', which might be driven by any combination of physical features. Appearance-based discrimination may also occur against people with visible disabilities, people with physical disfigurements, those that show signs of ageing, among many others.

2.2 Impacts

Body dissatisfaction and appearance-based discrimination are linked to an array of negative impacts. A broad literature review was undertaken to determine the full scope of impacts attributable to these pathways (a detailed description of the attributable impacts is provided in Chapter 4 and Chapter 5).

Evidence was assessed using the guiding principles of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach (see Appendix A for further detail).[18] Key factors considered in the evaluation of evidence include:

- **the risk of bias**
- **the precision of effect estimates**
- **the consistency of individual study results**
- **how directly the evidence answers the question of interest**
- **the risk of reporting bias.**

For body dissatisfaction, a range of health impacts were costed, including depression, eating disorders, suicide attempts, smoking,

anxiety, and alcohol and drug abuse. For appearance-based discrimination, health impacts including anxiety, depression, smoking, obesity, drug abuse and hypertension were costed. In addition to health impacts, labor market differentials and discriminatory incarceration were also considered. Labor market differentials included wage and employment losses. Discriminatory incarceration incurred wage losses and government expenditure on prisons.

Impacts were excluded if they risked double counting, if there was inadequate cost data, or if the empirical evidence was sparse. For example, hair discrimination was not costed due to lack of available empirical data, illustrating the need for further research in this space to understand its prevalence and associated costs.

Second order impacts were also not costed. In the context of this report, second order impacts are those conditions/illnesses which can be caused by an impact of body dissatisfaction or appearance-based discrimination but are not directly attributable. Examples of second order impacts include lung cancer attributable to smoking, or diabetes associated with having a BMI over 30 kg/m^2.

Future impacts of conditions attributable to body dissatisfaction and appearance-based discrimination were also not costed. For example, the costs of future labor market outcomes due to the impact of worse educational outcomes today.

Further detail around quantified outcomes and the population groups they apply to are provided in Appendix A.

2.3 Cost types

The modeling in this report estimates both the financial and nonfinancial costs associated with harmful beauty ideals. Financial costs include health and productivity costs, the societal impact of wage losses, government expenditure on prison, and the loss in economic efficiency associated with lost taxes or government expenditure (compared to a counterfactual where harmful beauty ideals do not exist). Non-financial costs, or loss of well-being costs, represent the reduction in quality of life due to impaired functioning or death that results from the impacts of harmful beauty ideals. Costs estimated in this report relate to the 2019 calendar year, prior to the COVID-19 pandemic.

These costs are borne by different individuals or sectors of society. It is important to understand how costs are shared in order to make informed decisions regarding interventions.

Typically, six groups bear costs and pay or receive transfer payments, including: (1) people directly affected by beauty ideals; (2) friends and family (including informal caregivers); (3) employers; (4) governments; (5) other payers (e.g., private health insurers); and (6) the rest of society.

Another group that may bear costs is the children of parents who have been discriminated against. But the costs of appearance-based discrimination in this study include the impact on only the individual directly, not the subsequent impact of the disadvantage on future generations of children.

Further descriptions of the costs, and a breakdown of costs by cost component and the bearers of cost, are provided in Table 2.1.
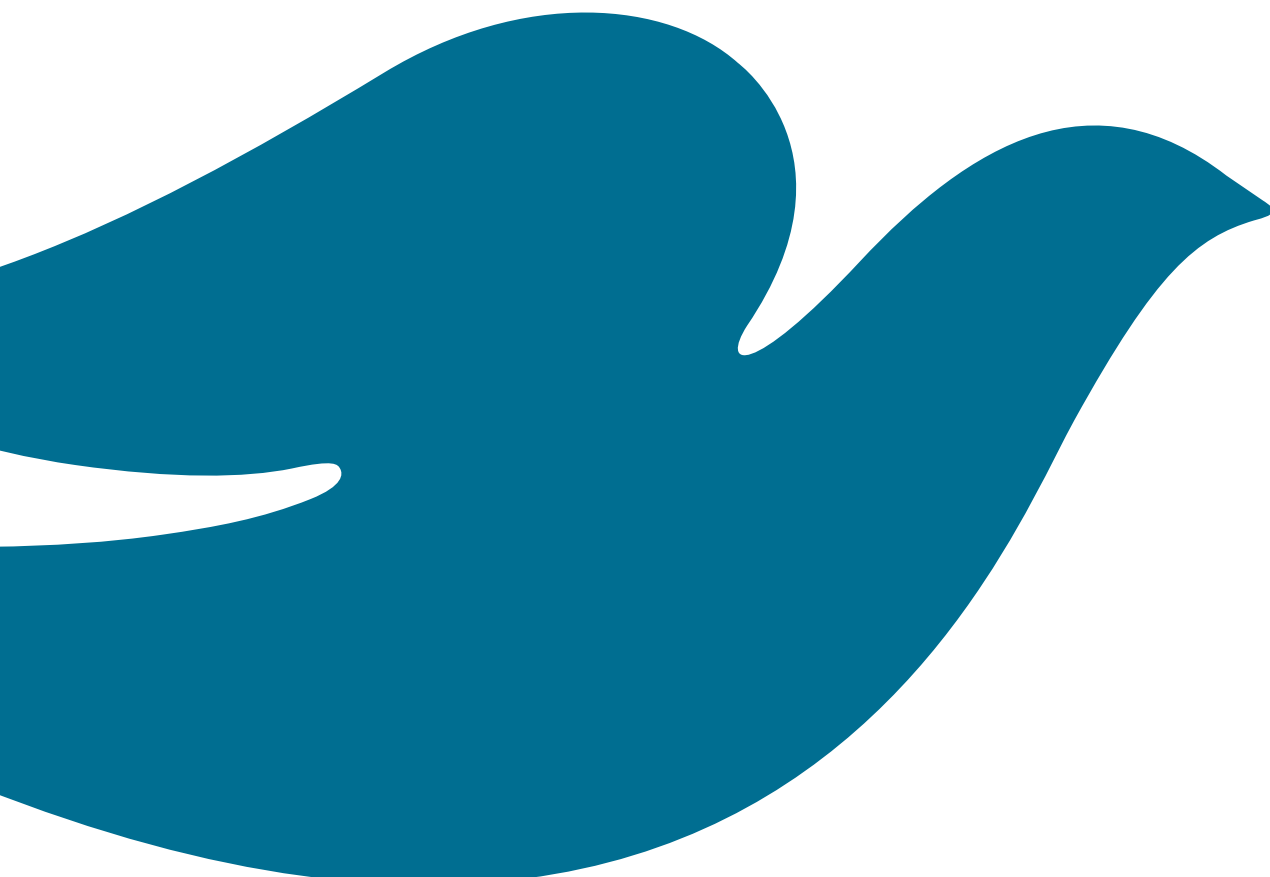
Table 2.1: **Breakdown of costs by cost types and bearers**

COST	COST COMPONENTS	BEARERS OF COST	DESCRIPTION
Health system costs	• Medical services, including hospital inpatient and outpatient services • Pharmaceuticals	• Individuals • Government • Health insurance providers • Rest of society	A financial cost that captures the associated health costs of illnesses and conditions attributable to body dissatisfaction or appearance-based discrimination. Includes the costs of medical services (such as inpatient and outpatient costs) and pharmaceuticals.
Productivity costs	• Reduced employment • Absenteeism • Presenteeism • Wage losses • Informal care	• Individuals • Employers • Government (forgone taxation) • Friends and family	A financial cost capturing reduced productivity (presenteeism), increased absences (absenteeism), and reduced participation in the labor market. This may also include wage penalties and lost future earnings due to premature death. Informal care captures the opportunity cost of a caregiver's time for conditions attributable to body dissatisfaction and appearance-based discrimination.
Other costs	• Efficiency losses • Prison expenditure • Societal impact of wage losses	• Rest of society • Government	Efficiency losses comprise the reduced economic efficiency associated with the need to levy taxes to fund the provision of government services and replace lost employment taxes attributable to body dissatisfaction and discrimination. Efficiency losses are not the same as transfer payments, which represent a redistribution of money and are not real costs to society. It is noted that some scholars caution against including efficiency losses; further detail is provided in Appendix A. The societal impact of wage losses reflects the reduction in economic efficiency from a suboptimal allocation of talent with the labor market, causing a reduction in output. Further detail is provided in Appendix A.
Loss of well-being costs	• Years of healthy life lost due to disability (YLD) • Years of life lost due to premature death (YLL)	• Individuals	A non-financial cost which captures the reduction in quality of life (measured through YLDs) and premature death (measured through YLLs) for people experiencing body dissatisfaction or appearance-based discrimination.

Source: Deloitte Access Economics.

The financial costs related to spending on cosmetic products and procedures have not been included in the main estimates for body dissatisfaction or appearance-based discrimination. This is because these costs are typically seen as a transfer between groups and not a net cost to society. For example, spending on cosmetic products may represent a cost to the individual, but would generate revenue for sellers of these products. Of course, there may still be distributional impacts associated with these transfers. For example, 92% of cosmetic procedures are undertaken by women,[19] whereas there are many more male compared to female plastic surgeons in the US.[20] Similarly, one study found that men in the US spend roughly $2,900 every year on beauty treatments and services, while women spend $3,700. Across a consumer's lifetime, this is equivalent to women spending an additional $50,000 on these products and services, relative to men.

2.4 Cost estimation

To our knowledge, this is the first study to holistically consider and cost the impacts of harmful beauty ideals. This means it differs from a typical cost study in that it spans multiple outcomes. While a typical cost study might capture costs associated with a single health condition such as depression, this study costs multiple health conditions attributable to harmful beauty ideals, alongside other outcomes such as wage losses due to labor market discrimination.

Two main approaches were adopted to estimate each cost component (e.g., health system, productivity, loss of well-being, etc. as outlined in Section 2.3) associated with each impact of body dissatisfaction and appearance-based discrimination:

- Where available, existing cost estimates for each impact have been sourced directly from the literature. Per person or per unit costs for each impact were updated based on the number of people affected in 2019.

- Where existing cost estimates were not available, or where particular costs are missing from the literature, cost components were estimated by sourcing and aggregating raw data inputs.

Occasionally, a combination of the two approaches has been used. For example, there are no existing estimates of the total societal labor market costs from appearance-based discrimination, so these were estimated separately for each group affected. Similarly, the study estimating the cost of depression includes both health and productivity costs, but does not consider broader loss of well-being, efficiency losses, and informal care costs, which were estimated using supplementary evidence.

Generally, existing cost estimates were able to be sourced for direct health costs and absenteeism and presenteeism costs. Costs associated with the value of informal care, loss of well-being, efficiency losses and other productivity losses were estimated from raw data inputs. The methodology used to estimate these costs type is described in Appendix A.

The costs identified for each impact were then estimated to body dissatisfaction and/or appearance-based discrimination using PAFs or direct cost estimation (see Box 2.1).

BOX 2.1: COSTING EACH IMPACT

METHOD 1:
Population attributable fractions (PAFs)

To attribute the costs of conditions to the pathways of beauty ideals (as opposed to other causes), this study relies on estimatesof the PAF for each impact.

THE PAF CAN EITHER BE:
• Multiplied by the total costs of the conditions attributable to body dissatisfaction and appearance-based discrimination in 2019, or
• Multiplied by the total prevalence of the related condition, and then multiplied the resulting attributed cases by the average cost per case.

As explored in the following chapter, body dissatisfaction can lead to depression, anxiety and a range of other impacts. The evidence in Appendix A shows that women who are body dissatisfied are more than 1.8 times more likely to become clinically depressed compared to those who are not. When combined with the prevalence of the condition, the PAF formula can be used to estimate body dissatisfaction leads to 13% of total cases of depression in women. To put that another way, the prevalence of depression could be reduced by this amount in the absence of body dissatisfaction. A similar process is repeated for each possible impact of both body dissatisfaction and appearance-based discrimination.

A summary of the PAFs and the inputs underlying them are further described in Appendix A, along with further detail regarding the selection of study inputs.

This method was applied to estimate costs associated with poorer health outcomes and discriminatory incarceration.

METHOD 2:
Direct cost estimation

Labor market discrimination differed from the other outcomes in that it presented as a cost in itself. That is, labor market discrimination that manifested in a wage loss was costed as the wage loss itself. To estimate the wage loss for a person who faced labor market discrimination, the median annual income (including an allowance for employee fringe benefits) for that person was estimated using Bureau of Labor Statistics (BLS) earnings data by race, age and gender. Then, the wage penalty due to appearance-based discrimination was applied to this income, assuming that no wage gap implied full earnings. For example, a person with an estimated annual wage plus benefits of $100,000 facing a 10% wage penalty due to their weight would instead earn $90,000. This results in a wage loss of $10,000 due appearance-based discrimination. These losses were aggregated for every individual who faced a penalty due to appearance-based discrimination.

Employment losses were estimated in a similar way to estimate the number of people unemployed due to appearance-based discrimination. To cost this, the median wages for a category by race, age and gender were applied to the number of people unemployed to estimate the total wage loss due to unemployment.

The wage losses due to labor market discrimination had associated efficiency losses due to lost taxation revenue for the government and also the reduction in societal output from an inefficient use of labor resources (i.e. because of the appearance-based discrimination, those workers are more likely to be in lower paying jobs that may not use their skills).

A summary of the relevant inputs used to estimate the direct costs of labor market discrimination are presented in Table A.16 and Table A.18 in Appendix A.

2.5 Limitations

There are a range of limitations associated with the modeling undertaken in this report. These are noted below.

- Many of the impacts considered in this study are **comorbid**, meaning one impact is related to another (for example, depression and smoking). This means there is a risk of double counting, as some of the costs included may already be captured through the costs of related impacts. To help minimize the risk of double counting, estimates have been drawn from research which controls for comorbid conditions where possible, to help isolate the main impact.

- An important consideration is whether a **causal relationship** was evident in the literature, between the impact being studied and the pathways of appearance-based discrimination and body dissatisfaction. Studies were reviewed to determine whether they controlled for a range of confounding factors, such as race or ethnicity, gender, age, and other variables. This was done to reduce the chance of bias impacting on the estimated PAFs in the costing study. Further, longitudinal studies, rather than crosssectional, were used where possible. While these measures are indicative of the strength of the evidence, they do not guarantee causality.

- Skin shade and hair type are key indicators of race. Race therefore plays a key role in the discrimination of an individual on the basis of these features. In this study, the focus is on understanding how appearance-based discrimination differs for people of the same race but with different skin shades and hairstyles, by relying on **studies that controlled for race**. However, more work is needed to

enable researchers to further disentangle the effects of appearance-based discrimination and identify the incremental costs.

- Additionally, the estimated **prevalence of body dissatisfaction** adopted in this study is a conservative measure, with other research suggesting it could be as high as 72% for women and 61% for men, contingent on how body dissatisfaction is defined and measured.[21] It is recommended that a consistent approach to measuring body dissatisfaction be adopted in the literature to help reduce this uncertainty and enable more accurate comparisons to be made across studies and over time.

- Our review identified various **gaps in the literature** around the impacts of body dissatisfaction and appearance-based discrimination. For example, while there is a large body of evidence surrounding the impact of body dissatisfaction on disordered eating in men, there is less evidence linking body dissatisfaction to clinical diagnoses of eating disorders in men. Furthermore, there are gaps in the literature regarding outcomes across all racial or ethnic groups. As a result, some impacts in this study, such as incarceration, are based largely on studies with the Black community. Where gaps exist the best available estimate from the literature has been used in sensitivity testing – for example, to demonstrate what the cost might be if skin shade discrimination leads to a wage gap for all workers of color.

- Skin shade, weight, and hair have been considered because they are some of the most common forms of appearance-based discrimination occurring in the US. However, appearance-based discrimination is in no way restricted to these forms.[xi] Further work is needed to **understand the costs attributable to other forms of appearance-based discrimination** not included in this study.

- Another limitation of this study is that it could not capture the financial and non-financial costs of body dissatisfaction and appearance-based discrimination for **transgender and gender nonbinary communities in the US** due to insufficient research on which to base these estimates. Body dissatisfaction and weight, skin shade, and hair discrimination affect transgender and gender nonbinary communities, but how these experiences are patterned by age, sex assigned at birth, and other important factors is not yet known. In addition, discrimination targeting transgender and gender nonbinary communities for their gender expression is widespread and likely to profoundly affect employment and other economic indicators, but more research is needed to help inform costing analyzes like those presented in this report for cisgender women and men.

- This study **costed skin shade discrimination for only the Black community** in the US due to a lack of empirical evidence around its impacts within other racial groups (such as Latino or Asian groups). Due to this restricted focus, the prevalence and costs of skin shade discrimination are likely understated in this study. It is recommended that future research focuses on different racial or ethnic groups to help inform future quantitative analysis.

- Finally, it is noted that this report is **reliant on other studies for information about individuals' race or ethnicity** as it relates to experiences of appearance-based discrimination and body dissatisfaction. However, the racial and/or ethnic identity of certain communities in the US is complex, and source data often lacks more detailed information about individuals' race or ethnicity. A key example of this is people who identify as being Hispanic or Latino. Standards issued by the Office of Management and Budget specify that race and Hispanic origin (i.e., ethnicity) are two separate and distinct concepts.[22] In other words, people who identify as being Hispanic or Latino can be of any race (e.g., white, Black, Asian, etc.), and are identified as such in the US Census. Unfortunately, this level of detail is often not included in source literature and as such this report is limited to describing people of Hispanic or Latino origin by their ethnicity only and not by their ethnicity and race. It is recommended that future research separately identifies race and ethnicity, to enable researchers to understand how outcomes differ for these different subgroups and to ensure individuals' racial and ethnic backgrounds are accurately represented in the underlying data.

More broadly, as this is the first time this type of costing exercise has been undertaken, there are inherently limitations associated with the analysis. In raising awareness of the harms of beauty ideals, this report also seeks to build interest and motivation for studying the impacts of harmfulbeauty ideals to help broaden the evidence base for future research.

xi For example, some literature looks at the impacts associated with being perceived as simply 'unattractive', which might be driven by any combination of physical features. Appearance-based discrimination may also occur against people with visible disabilities, people with physical

3 Prevalence.
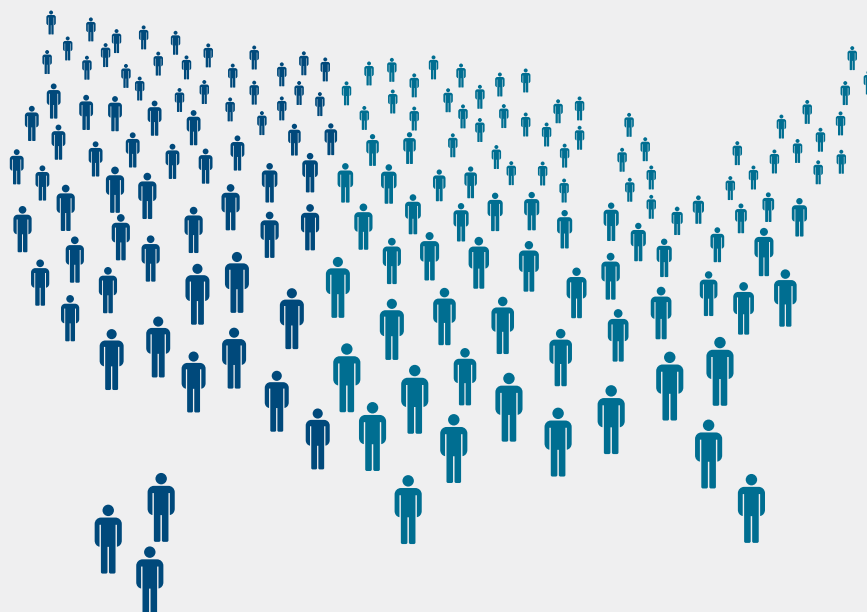
BODY DISSATISFACTION

affected

45 million

people in the US

in 2019

APPEARANCE-BASED DISCRIMINATION

affected

66 million

people in the US

in 2019

3 Prevalence

Key findings

- This report conservatively estimates that **45 million or 16**% of people in the US aged 10 years and older were severely affected by body dissatisfaction in 2019.
- In addition, **18% or 66 million** people experienced appearance-based discrimination.

3.1 Body dissatisfaction

It is estimated that 45 million people or 16% of the population aged 10 years or older were severely affected by body dissatisfaction in 2019 (Chart 3.1). For context, the prevalence of body dissatisfaction in the US is estimated to be higher than the prevalence of smoking (34 million people).[23]

The estimates of the prevalence of body dissatisfaction were drawn from Fallon et al (2014), which uses a sample of roughly 2,000 adults in the US.[24] Body dissatisfaction was measured using the Body Areas Satisfaction Subscale (BASS) of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; see Box 3.1). Estimates from Fallon et al. (2014) were ad-

justed for age differentials and multiplied by the US age-sex specific population in 2019 to determine the total prevalence of body dissatisfaction (see Appendix A for more detail). It is likely that experiences of body dissatisfaction vary significantly, ranging from lapses in body confidence, to more severe and persistent experiences. This research focuses on more severe and persistent experiences, but further work is needed to understand differences in experiences and severity of body dissatisfaction across the population. Furthermore, the prevalence estimates adopted in this study are likely conservative, with prior research indicating the prevalence of body dissatisfaction could be as high as 72% for women and 61% for men.[26]

Chart 3.1: **Prevalence of body dissatisfaction in the US, by gender and age group**
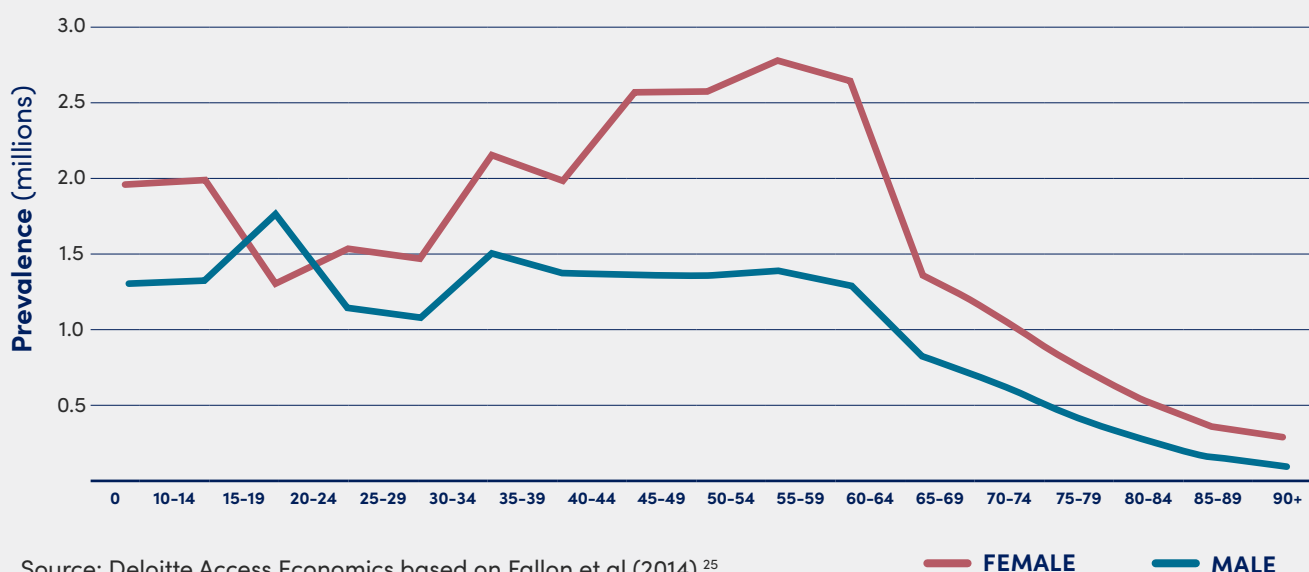
Source: Deloitte Access Economics based on Fallon et al (2014).[25]

FEMALE   MALE

While it is generally accepted that the prevalence of bodydissatisfaction is higher among women than it is for men, empirical evidence around the prevalence of body dissatisfaction by age is inconclusive. For example, there are some studies that suggest body dissatisfaction is higher among adolescents and gets lower as people age.[27] In contrast, using US data, Wang et al (2019) found that 95% of individuals experienced relatively stable body dissatisfaction from adolescence through to adulthood.[28] Further, Quittkat et al (2019) found that only in men did older age predict a lower level of importance of appearance.[29] Another study by Bucchianeri et al. (2013) found that body dissatisfaction increased from adolescence to young adulthood, however this trend became non-significant when BMI was controlled.[30] Karazsia et al. (2017) find that changes in body dissatisfaction over time vary for different dimensions of body dissatisfaction.[31]

As such, in this report the prevalence of body dissatisfaction by age has been kept consistent with Fallon et al (2014) (see Appendix A for further details). Because Fallon et al (2014) considered only US adults aged 18 and above, the prevalence for younger age groups is based on the average prevalence across the population more broadly (i.e., no age adjustment has been made for ages 10 to 14).

The prevalence of body dissatisfaction can also vary by race/ethnicity. According to Fallon et al. (2014), the prevalence of body dissatisfaction for women is highest among Black women and lowest among white men.[32] It is noted that to cost body dissatisfaction, prevalence was held constant across all racial and ethnic groups i.e., only age- and gender-specific parameters were used; see Appendix A.

Chart 3.2: **Prevalence of body dissatisfaction by race/ethnicity[xii]**
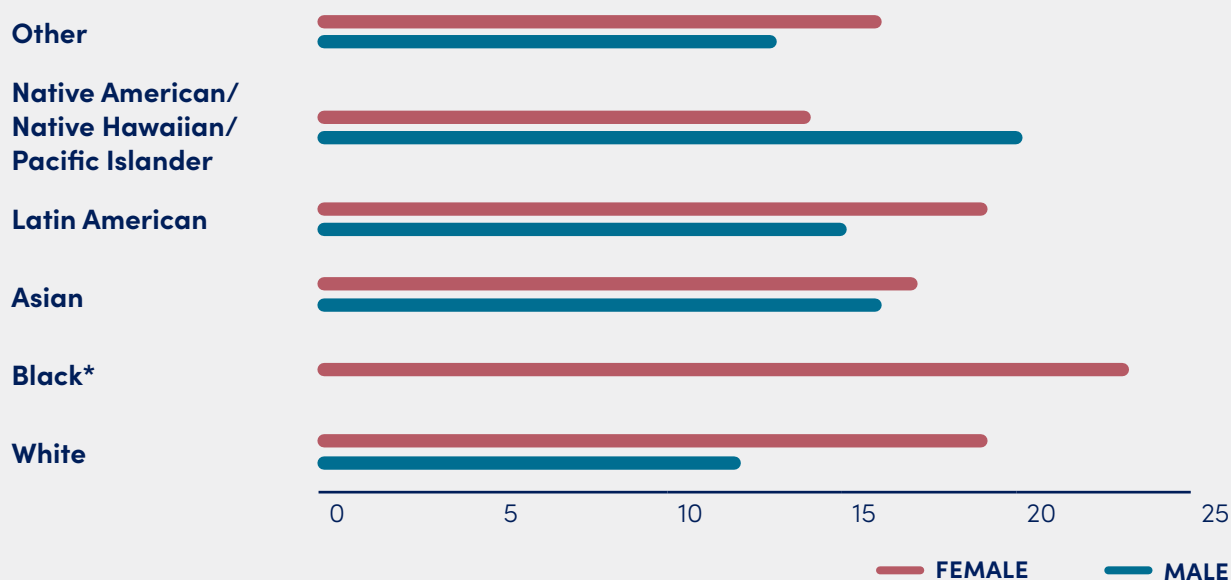
Source: Deloitte Access Economics based on Fallon et al. (2014).[33]
*Note: The prevalence of body dissatisfaction among Black men in the sample was estimated to be 0% (n=9).

xii It is noted that the sample size for certain races was less than n=10. As such, care should taken when relying on these results, and it is recommended that further research is undertaken to understand how body dissatisfaction varies by race/ethnicity.

BOX 3.1: MEASURING THE PREVALENCE OF BODY DISSATISFACTION

There are various instruments noted in the literature that are commonly used to measure body dissatisfaction.

Fallon et al (2014), from which the prevalence estimates from this study are adapted, uses the Body Areas Satisfaction Subscale (BASS) of the Multidimensional Body-Self Relations Questionnaire (MBSRQ).[34] BASS uses a five-point scale ranging from (1) very dissatisfied to (5) very satisfied to measure participants' satisfaction with nine specific areas of their bodies (i.e., face, hair, lower torso, mid-torso, upper torso, muscle tone, weight, height, and overall appearance).

Scores are averaged across the nine areas to yield a single body dissatisfaction score, where lower scores represent greater dissatisfaction. While there are various cut-off points in the literature for classifying people as being body dissatisfied, this report conservatively uses a cut-off score of 2.75, based on Frederick et al (2007).[35] In sensitivity analysis, we test the impact of varying the cut-off score to 3 based on Cash & Henry (1995),[36] see Appendix B.

BASS is also used in studies looking at the relationship between body dissatisfaction and various impacts included in our study, such as in Crow et al (2008)[37] and Stice et al (2016).[38]

Other measures commonly used in the literature to measure body dissatisfaction include:

- The appearance evaluation subscale of the MBSRQ, which captures feelings of physical attractiveness on a 7-point scale.

- The Stunkard (figure rating) scale. This provides participants with nine body shapes from which they are asked to select their current and ideal body shapes. Differences between the chosen and ideal body shape are considered to represent body dissatisfaction.

Across the various measures of body dissatisfaction, estimates typically reflect current attitudes and feelings towards one's body, as opposed to capturing retrospective body dissatisfaction.

3.2 Appearance-based discrimination

It is estimated at least 66 million people in the US experienced appearance-based discrimination in 2019, representing approximately 18% of the total population aged 10 years or older. This was estimated by aggregating the number of people affectedby weight, skin shade, and hair discrimination.[xiii] Of the 66 million, it was estimated that 34 million faced weight discrimination, 27 million faced skin tone discrimination, and 5 million faced hair discrimination. For the

purposes of the calculations in this report, it was assumed that someone could be counted towards only one form of discrimination. However, this is not necessarily reflective of the true experiences of people facing discrimination. Estimates on the prevalence of hair discrimination was found only for women, however it is possible it is experienced by all genders.

The prevalence of appearance-based discrimination in this report does not reflect the number

of people who also face appearance-based discrimination on the basis of other physical features such as the shape of one's nose and mouth, the shape and size of one's breasts, height, and physical disabilities. Including all forms of discrimination for all groups who experience it would likely result in a far larger estimate of prevalence. This study also doesn't consider discrimination based on gender identity. For example, it doesn't account for the discrimination faced by transgender or nonbinary individuals who don't present within the traditional gender binary.

The prevalence for appearance-based discrimination varied by type of discrimination and impact. As such, a range of different data sources have informed these estimates. Health outcomes were applied to people ever having perceived discrimination in their lifetime, which in turn was applied to the relevant population in 2019. Labor market outcomes and incarceration were based on physical characteristics, such as skin shade and weight, which were derived for the population in 2019.

3.2.1 Weight discrimination

Weight discrimination can occur against people in every weight category, but is higher on average for people of a higher body weight (Chart 3.3).

Estimates of perceived weight discrimination were applied to the entire US population, with outcome differentials captured by race or ethnic group and gender. Where these prevalence estimates or their associated outcomes were specific to people in a certain weight category, the weight distribution for the population was derived from CDC.[39]

Chart 3.3: **Prevalence of weight discrimination in the US, within each weight category**
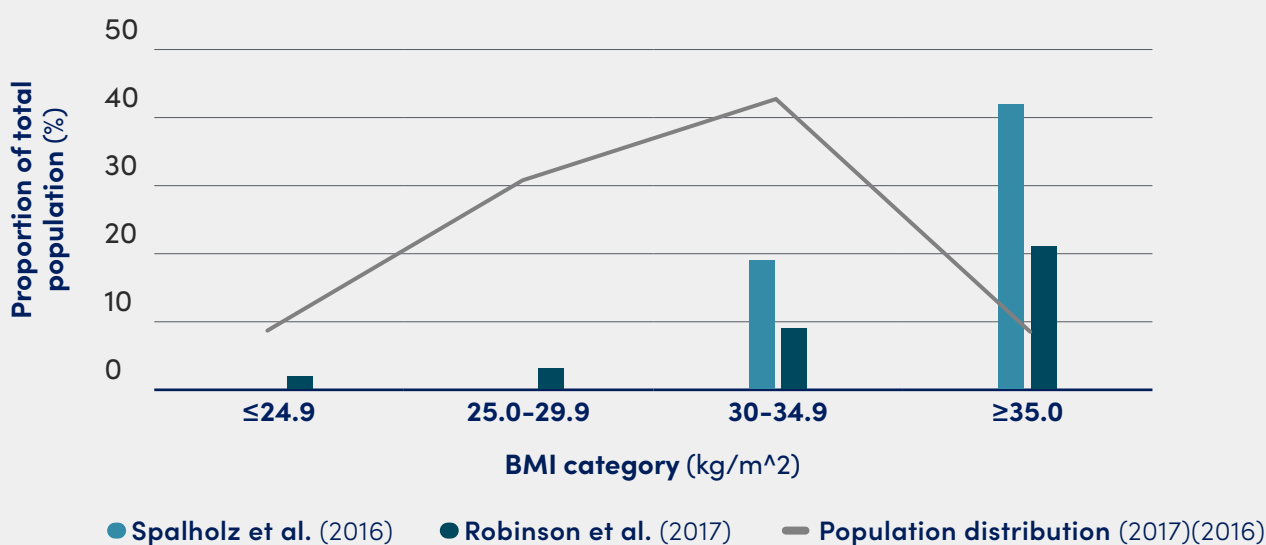
Source: Deloitte Access Economics based on Spalholz et al (2016)[40], Robinson et al (2017)[41], CDC[42]

Weight discrimination can also be an intersectional issue, varying by race, gender, socioeconomic status, sexual orientation and other factors.[43] For example, estimates from Dutton et al. (2014) show that white women with a BMI greater than 35 kg/m2 were more likely to report experiencing weight discrimination than any other group studied (Chart 3.4). In fact, 100% of white women with a BMI greater than 35 kg/m2 report experiencing weight discrimination, compared to 60–66% of African Americans and white men of a similar weight.[44] It is noted that to cost weight discrimination, prevalence was held constant across all racial and ethnic groups i.e., only age- and gender–specific parameters were used; see Appendix A.

Chart 3.4: **Prevalence of weight discrimination, by BMI category, relative to white women with a BMI over 35kg/m2 in the US.**
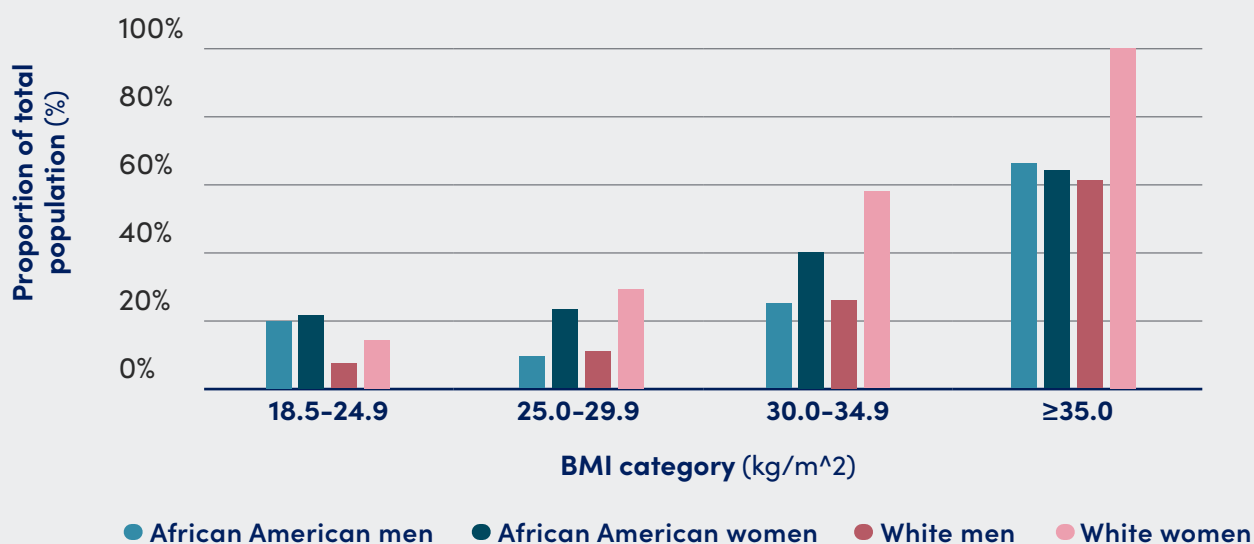
Source: Deloitte Access Economics based on Dutton et al. (2013).45
Note: Estimates were not available for other racial/ethnic groups.

3.2.2 Skin shade discrimination

Costs associated with skin shade were restricted to the Black population in the US due to a lack of empirical research currently available for other communities such as Asian Americans, Native Americans, and Latin Americans. The impacts faced by some of these communities have been qualitatively explored in this study (see section 5.1).

To derive costs associated with skin shade discrimination, the population was segmented into various 'shades' on a scale from 'very light' to 'very dark' (see Chart 3.5). Since outcomes in literature were presented for people based on their skin shade, the number of people in a given skin shade category informed the prevalence for the modelling. However, prevalence ultimately varied by outcome.

For example, if Black people in the darkest skin category had 15% lower wages than those in the lightest skin category holding all else constant, then wage penalties of 15% of the median wage were multiplied by the proportion of Black people in darkest skin category.

Chart 3.3: **Prevalence of skin shade discrimination in the US, within each skin shade category**

● **Monk, E. P** (2015) ● **Kreisman and Rangel** (2015)
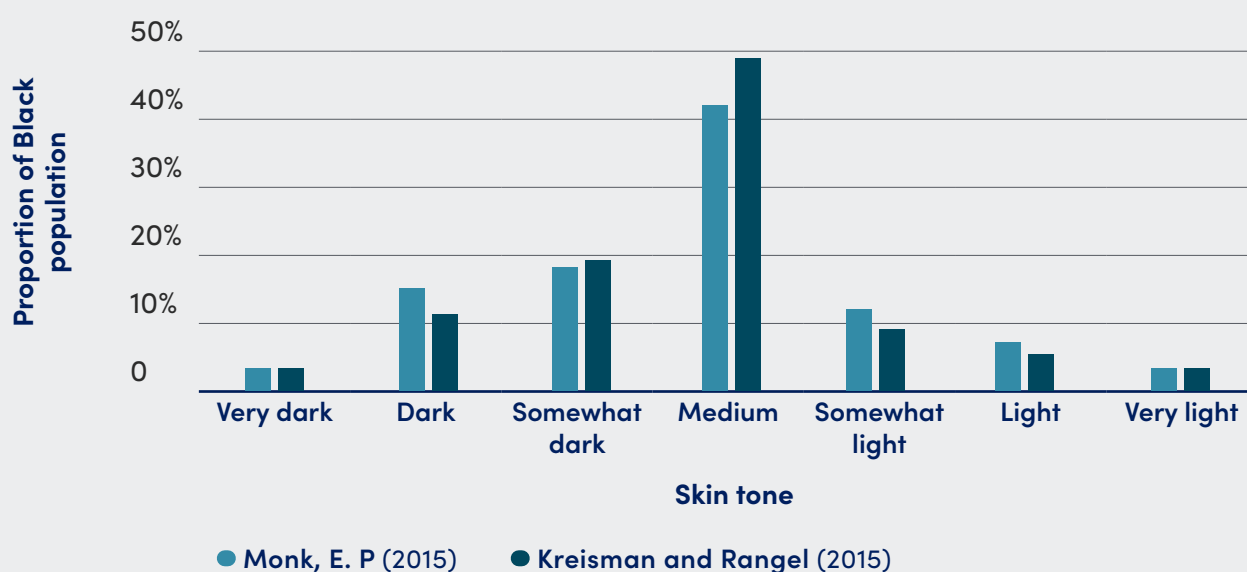
Source: Deloitte Access Economics based on Monk, E. P (2015)46 , Kreisman and Rangel (2015)[47] .
The seven point distribution (very dark to very light) for Kreisman and Rangel is estimated by aggregating the proportions from the 10-point scale presented in the study.

3.2.3 Natural hair discrimination

As with skin shade discrimination, the bulk of empirical evidence relating to hair discrimination was associated with the Black population in the US, and as such our analysis has been restricted to this group. Based on self-reported experiences of discrimination, previous research estimates that one-quarter of women identifying as being of African descent are affected by natural hair discrimination.[48] The evidence contained experiences of only women, and more work is needed to understand the prevalence of natural hair discrimination among men as well as across other ethnic and racial groups in the US. As an example, anecdotal evidence suggests the Jewish community in the United States may experience judgement and discrimination based on their hair, however there is insufficient empirical evidence to cost this.[49]

Case study: **Lived experiences of natural hair discrimination**

Viola is a 31-year-old mixed race woman working as an information security analyst in Texas, of Black and white heritage. Viola feels beauty ideals in the United States have evolved over her lifetime, from the 'blonde hair, thin figured Barbie look', to more curvaceous figures. But while curves and dark hair have become more accepted, they are still limiting.

Viola's introduction to beauty ideals coincided with an experience of hair discrimination at her daycare when she was only four years old. The barrette and hair tie her mother clipped on to hold down her Afro broke off while Viola was playing at daycare, causing the other kids to question what was 'wrong' with her hair and refuse to play with her any longer. During sleepovers with friends who did not have similar hair to her, Viola would often be barraged with questions when wrapping her hair at night.

"What's going on here? Can we touch your hair? Can you wrap our hair? Is this necessary? I mean, just all these questions and I'm like, 'I'm six. I don't know what to tell you guys, wrap your hair if you want to but why are we touching my hair? I'm not touching your hair.' It was very weird."

Decades later as an adult, Viola still experiences stigma around her hair. Her experiences are everyday micro-aggressions she describes facing everywhere, including her workplace. Viola shares an experience she had at her workplace, where she decided to wear her hair naturally one day to let it breathe and felt eyes on her and faced negative comments.

Alongside hair discrimination, Viola has also had experiences surrounding her skin shade, that she attributes to her being of mixed race. She remembers walking around with her mother who had blonde hair and blue eyes, and having people ask her "Who is this girl following you around?", despite Viola being her biological child and having very similar facial features. She notes that people could never look past the skin shade and hair and that her stepsister who isn't a biological child of her mother's but has blonde hair and blue eyes was more accepted as a daughter by society.

Viola's experiences with natural hair stigma led to her relaxing her hair frequently, up until the age of 22, after which she decided to embrace her natural curls. Her hair treatments included hair straightening kits she used as a child, which would sometimes burn her scalp.

Natural hair stigma has also impacted the life of **Layla, a 43-year-old woman** who works as a psychotherapist in Manhattan, New York. Layla has a "big, luscious Afro" she wears in a variety of styles now, but was met with curiosity and discomfort at her workplace when she first transitioned from chemically relaxed hair to natural hair.

"I would have non-Black coleagues, even superiors asking lots of questions about my hair. How do I manage it? How do I touch it? Can I blow it out? Or expressing preferences for styles I wore before [going natural], just comments that I found really uncomfortable and inappropriate in the workplace."

Being tired of the dependency on chemical treatment, and due to the damage it was causing to her hair texture, Layla decided to embrace her natural hair. Despite the burdens associated with having to constantly manipulate hair textures to conform to societal standards, Layla says hair relaxing remains a common practice in her family and in her community.

4 The economic and social cost of body dissatisfaction.

$305 billion

$84 billion Financial costs

$221 billion Loss of well-being

POOR HEALTH OUTCOMES

REDUCED ENGAGEMENT

RISKY BEHAVIOUR

RISKY COSMETIC PRODUCTS AND PROCEDURES

4 The economic and social cost of body dissatisfaction

Key findings

- The **combined financial and well-being costs of severe body dissatisfaction in the US was estimated to be $305 billion in 2019**. This includes $84 billion in financial costs and $221 billion in non-financial costs. The financial costs of body dissatisfaction comprised 0.4% of total US GDP in 2019.

- There is an array of serious impacts that are attributable to body dissatisfaction. The four main categories of impacts identified include poorer health outcomes, risky behavior, reduced engagement at school and work, and use of risky cosmetic products and procedures.

- The costs of body dissatisfaction are shared by many different groups. Individuals directly impacted by body dissatisfaction bore roughly one-third (32%) of the financial costs. However, government (29%) and employers (14%) also bore a large share.

4.1 Impacts of body dissatisfaction

The impacts of body dissatisfaction can be devastating. It can trigger impacts ranging from low self-esteem and anxiety to high-risk drinking and even suicide. It can also cause individuals to undertake more extreme measures to achieve harmful, narrow ideals, such as cosmetic surgery.

Four broad categories of impacts that are typically associated with body dissatisfaction were identified including poorer health outcomes, reduced engagement (at school and work),

risky behavior (e.g., drug and alcohol abuse), and use of risky beauty products or procedures (i.e., products or procedures that are associated with potential health risks such as cancer or surgical complications) (see Figure 4.1). Further detail on the search strategy underpinning the identification of these impacts is provided in Appendix A.

Figure 4.1: **Impacts of body dissatisfaction**

POOR HEALTH OUTCOMES

- Eating disorders
- Depression
- Anxiety
- Other behavioural problems
- Low self-esteem
- Self-harm
- Suicide

REDUCED ENGAGEMENT

- Avoiding school or work
- Lower academic achievement
- Avoiding social interactions

RISKY BEHAVIOUR

- Drug and alcohol abuse
- Smoking
- Risky sexual behaviour

RISKY COSMETIC PRODUCTS AND PROCEDURES

- Cosmetic surgery
- Figure altering substances
- Indoor tanning
- Skin bleaching
- Chemical hair straightening

Source: Deloitte Access Economics.

4.1.1 Poorer health outcomes

Body dissatisfaction is associated with a range of negative health outcomes. While there is an extensive body of literature covering these health impacts, existing studies tend to focus on a single condition/illness in isolation (i.e., depression). This section attempts to provide a more holistic view of the attributable impacts, drawing on evidence from a range of sources.

Body dissatisfaction is associated with poorer mental health outcomes. In particular, the risk of developing an eating disorder is much higher for those who are body dissatisfied, compared

to those who are not.[50,51,52] For example, in a systematic literature review of 22 studies, body dissatisfaction was identified as a possible pro-spective associations of eating disorders were identified.[53] Stice et al. (2016) find that the risk of developing bulimia nervosa or binge eating disorder is 2.1 times higher among women who are body dissatisfied, relative to those who were not.[54] Additionally, Neumark-Sztainer et al. (2006) find that even after controlling for BMI, body dissatisfaction predicts unhealthy weight control behaviors and binge eating for both men and women.[55]

Body dissatisfaction is also associated with a greater risk of developing depression.[56] Bornioli et al (2021) found that men who are body dissatisfied are 2.9 times more likely to experience severe depressive episodes while women are 1.8 times more likely, relative to those who are not body dissatisfied.[57] Similarly, Paxton et al. (2006) find that body dissatisfaction prospectively predicts depressive mood in both girls and boys, but in different phases of adolescence.[58] The risk of developing moderate or severe anxiety is also higher for those with body dissatisfaction, for both sexes.[59] Body dissatisfaction can lead to lower self-esteem[60] and increases the risk of self-harm and suicide.[61] Using longitudinal data, Mars et al. (2019) find that among those who had experienced suicidal ideation, those who had attempted suicide were more likely to report being body dissatisfied.[62]

There is some research that body dissatisfaction can worsen during pregnancy, which, in turn, may cause maternal mental health to deteriorate. For example, body dissatisfaction has been associated with antenatal anxiety and postpartum depression.[63,64] Not only do such conditions severely impact a mother's quality of life, they can also have a multigenerational effect, worsening the health outcomes of her child.

It is noted that much of the research looking at mental health impacts of body dissatisfaction focus on symptoms of mental distress, rather than the clinical diagnosis. Mond et al (2013) examine the relationship between body dissatisfaction and various mental health indicators, such as feeling 'blue/sad', which in turn is associated with depression.[65] Similarly, Regis et al (2018) explore whether body image dissatisfaction is associated with symptoms of social anxiety disorder.[66]

There is some, albeit limited, evidence that body dissatisfaction could lead to worse physical health outcomes. Although generally this research focuses on broad definitions of physical health such as mobility as opposed to being linked to any one attributable condition or illness.[67]

4.1.2 Risky behavior

The likelihood of undertaking risky behavior is higher among people who are body dissatisfied, compared to those who are not. Bornioli et al. (2019) demonstrate that body dissatisfaction in adolescence predicts the occurrence of several risky health behaviors. They found that women who were body dissatisfied were 1.4 times more likely to engage in high-risk drinking, 1.5 times more likely to take illicit drugs, and 1.4 times more likely to smoke, relative to women who were not body dissatisfied.[68] Among men, they found that body dissatisfaction predicted smoking.[69]

While Bornioli et al. (2019) did not find significant associations between body dissatisfaction and illicit drug use/high-risk drinking among men, other studies have found significant relationships when using proxy measures for body dissatisfaction. For example, Field et al (2014) found that males with high concerns about muscularity and thinness were 2.1 times more likely than their peers to use drugs. They also find males with high concerns about muscularity and who use muscle-building dietary supplements, were twice as likely to start binge drinking frequently.[70]

The relationship between body dissatisfaction and risky behavior is supported by a range of other prospective studies. For example, Howe et al. (2017) found that body dissatisfaction was

associated with increased odds of late-onset regular smoking among both men and women,[71] while Stice & Shaw (2003) found that body dissatisfaction was associated with increased odds of smoking initiation in a sample of adolescent girls.[72] When estimating the costs of smoking attributable to body dissatisfaction in this report, only direct costs were included i.e., productivity costs associated with taking smoking breaks. The costs of conditions associated with smoking (e.g., lung cancer, heart disease, stroke, etc.) were not included as these reflect second order impacts (see Section 2.2).

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Case study: **Lived experiences of body dissatisfaction**

Max is a 33-year-old white man, current-ly managing a hotel in Indianapolis. Max spends a lot of time facing customers, often in large groups, when organizing events in his hotel. This isn't always easy, and Max has to often muster courage to face his customers day in and day out, due to expe-riences he had growing up.

Growing up, Max was the tall, skinny kid who always got made fun of. He would have to deal with judgmental questions about his weight – "Oh, why don't you eat enough? Do you have an issue with eating?" which made him lose body confidence.

"I always felt like I was under an ideal weight, so I would always try and be snacking on things, and eating as much as I possibly could, and trying to eat in front of people so they didn't get this perception that I never ate."

Max's experience of body dissatisfaction goes beyond his weight, with low confidence also surrounding his teeth. His experience has impacted him mentally, financially, and socially. Max has suffered anxiety in social situations, anticipating negative comments about his appearance. Max has also spent over $2,000 on orthodontic aligners; money he says he would have rather spent on other items such as bills. He also avoids social settings where he might have to interact with large groups of people, even if he really wants to attend these events.

"I have a lot of friends that are into comedy, so we'd go out to open mic nights, and I have always wanted to so bad get up there and just do something or acting... I just steer away from that because I feel like people would just be looking at my teeth."

Spending on cosmetic products to achieve a beauty ideal is something Max has in common with **Marlene, a 51-year-old transgender African American woman** living in Indiana.

"It was just so many different things that was necessary, or that we were led to believe were necessary in order to achieve this portion of beauty... Let me tell you, thousands and thousands of dollars later, I've never achieved what all of these products said that I would potentially achieve."

In fact, Marlene describes how body dissatisfaction led her to use risky products to help her achieve a beauty ideal, including illegal injection of liquid silicone and skin bleaches. Despite the risks, Marlene says adhering to beauty standards have provided her with a sense of safety as she moved through the world, knowing that she would be perceived by others as a cisgender woman.

"You see me as a woman, you see me as your auntie, you see me as your sister. You don't see me as a drag queen..."

As a transgender woman, Marlene's attitudes towards beauty ideals are complex. And while she feels satisfied with her appearance since her transition, she feels there is always more that can be done to change the way her body looks – "I want a tummy tuck. I want to get lipo. I want these love handles gone."

Importantly, Marlene views her experiences as strengthening for her character and her resilience. She describes herself as a social justice warrior and activist. Her resilience helps her to help others through her work in public health, where she has been working for the last 15 years. For Marlene, the key to reducing the consequences associated with harmful beauty ideals is to diversify what beauty looks like, not only through racial diversity, but also by embracing flaws and imperfections that people have.

4.2 Costs of body dissatisfaction

The economic and social cost of body dissatisfaction was estimated to be **$305 billion** in the US in 2019. Of this total, $84 billion is attributed to financial costs and $221 billion is attributed to non-financial costs, reflecting the loss in well-being associated with body dissatisfaction. Women bore the majority (58% or $177 billion) of the total financial and non-financial costs of body dissatisfaction.

Figure 4.2: **Economic and social costs of body dissatisfaction, 2019** (billions)

$84 billion Financial cost

$221 billion Loss of well-being

Source: Deloitte Access Economics.

The financial costs of body dissatisfaction were equivalent to 0.4% of the total US Gross Domestic Product (GDP) in 2019 (equal to $21.4 trillion). For context, the financial costs of body dissatisfaction would cover tuition, fees, room and board costs for 2.9 million college students in the US for one academic year,[xiv] reflecting 17% of all students enrolled in a postsecondary institution in 2019.[89,90]

4.2.2 Financial costs

The financial costs of severe body dissatisfaction totaled **$84 billion**, or 28% of the total costs of severe body dissatisfaction (see Table 4.1). This represents nearly $1,900 per person in the US with severe body dissatisfaction. Of the financial costs, productivity costs contributed the largest proportion of costs, comprising 63% of the financial costs.

By condition, the largest share of these costs was accounted for by anxiety due to body dissatisfaction ($34 billion; 41%), followed by depression ($15 billion; 18%). This is a conservative estimate because the modelling in this report has focused on severe depressive episodes only, which contributes approximately 10% of all major depression disorder cases.[91] It does not account for mild or moderate forms of depression which can also impact day-to-day engagement.

Table 4.1: **Financial costs due to body dissatisfaction in 2019**

COST COMPONENT	TOTAL COST ($M)	COST PER PERSON WITH BODY DISSATIS-FACTION ($)	PROPORTION OF TOTAL COST (%)
Health system costs	9,060	204	11%
Productivity losses	68,566	1,545	81%
Efficiency losses	6,464	146	8%
Total	**84,090**	**1,895**	**100%**

Source: Deloitte Access Economics. Note: components may not sum to totals due to rounding.

xiv Based on average costs in a four-year institution in the United States.

Individuals impacted by body dissatisfaction bore roughly one third (32%) of the total financial costs. Government and employers also bore a significant share, estimated at 29% and 14% respectively (see Chart 4.1).

Overall, the costs of body dissatisfaction by age tend to be consistent with its prevalence, with a few exceptions. The costs of body dissatisfaction for people aged 10 to 14 are relatively small compared to what would be expected based on prevalence (see Chart 4.2), but this represents the lack of attributable employment costs for this age group. In comparison, the costs for some other age groups exceeded what would be expected based on the number of people impacted – in particular, for ages 20 to 24. This is likely due to the higher prevalence of depression, suicide, and suicide attempts for people within thisage bracket.

Chart 4.1: **Financial costs of body dissatisfaction by payer in 2019** ($ millions)

Individuals	**$26,684**
Governments	**$24,478**
Employers	**$11,363**
Friends and family (carers)	**$11,124**
Society	**$6,464**
Healthcare payers	**$3,977**
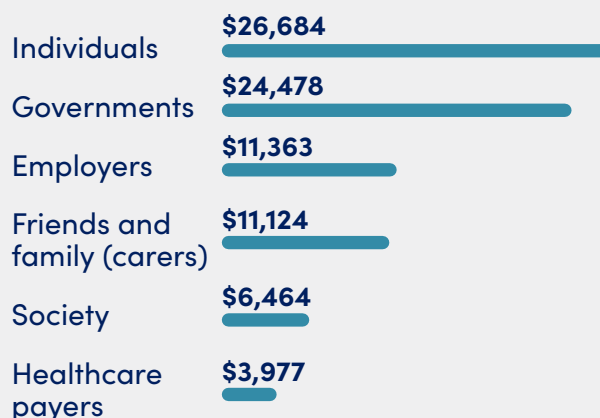
Source: Deloitte Access Economics analysis.

Chart 4.2: **Financial costs of body dissatisfaction by attributed condition and age group (in years), $ billions** (left axis) **and prevalence of body dissatisfaction by age group** (right axis)

● Depression ● Suicide attempt ● Eating disorder ● Anxiety ● Smoking ● Alkohol and drug abuse ━ Prevalence
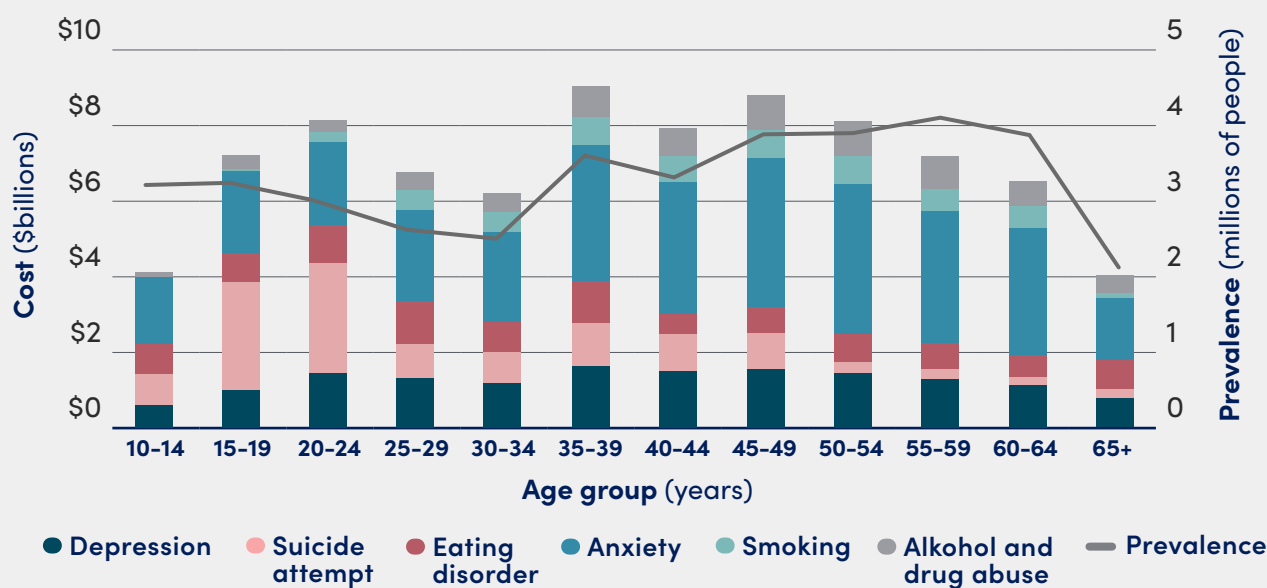
Source: Deloitte Access Economics

4.2.2.1 Health system costs

The total expenditure on health services due to body dissatisfaction in 2019 was estimated to be **$9 billion**. This is equivalent to a cost of $204 per person with body dissatisfaction (see Table 4.2).

The distribution of these costs varies by health condition. Anxiety, as well as drug and alcohol abuse, were the main drivers, accounting for 39% and 34% of the total attributed health expenditure respectively. Depression was another major contributor to health system expenditure, comprising 10% of the total cost. However, as mentioned this is likely underestimated due to the focus on severe major depressive disorder only.

Health costs for smoking were not estimated, as these costs are not directly attributable to smoking but instead reflects costs of conditions and illnesses associated with smoking (e.g., lung cancer, heart disease, etc.) i.e., second order impacts. Second order impacts were not in the scope of this report so were not estimated. If included, they would increase the estimated costs of harmful beauty ideals.

Furthermore, it is likely there are costs associated with government-funded tobacco control efforts in the US. These costs have not been included in the main results, but its inclusion was tested in the sensitivity analysis, see section 4.2.4.

Table 4.2: **Annual health system costs attributable to body dissatisfaction in 2019** ($, millions)

HEALTH IMPACT	MEDICAL COSTS	PHARMACEU-TICAL COSTS	TOTAL	COST PER PERSON WITH BD ($)
Depression	715	190	**905**	20
Suicide attempts	576	302	**878**	20
Eating disorders	679	15	**695**	16
Anxiety	2,408	1,138	**3,546**	80
Drug and alcohol abuse	2,668	368	**3,036**	68
Total	**7,046**	**2,014**	**9,060**	204
Cost per person with BD ($)	159	45	204	

Source: Deloitte Access Economics analysis.
Note: Components may not sum to totals due to rounding; Second round impacts such as respiratory conditions and lung cancer associated with smoking are not included in this study (see Appendix A)

Medical costs contributed 78% ($7 billion) of total health system cost, with pharmaceuticals contributing the remaining 22% ($2 billion) (see Chart 4.3). Government bore the majority of health costs (45%), followed by private health insurers (44%).

Chart 4.3: **Health system costs attributable to body dissatisfaction in 2019, by health condition and cost type** (first panel) **and cost bearer** (second panel) ($ million)

Legend (first panel):
- Medical costs
- Pharmaceuticals

Costs ($ millions)

Categories: Drug and alcohol abuse, Anxiety, Eating disorders, Suicide attempts, Depression

Axis: $0, $2,000, $4,000

Legend (second panel):
- Individuals
- Government
- Private health insurers

Costs ($ millions)
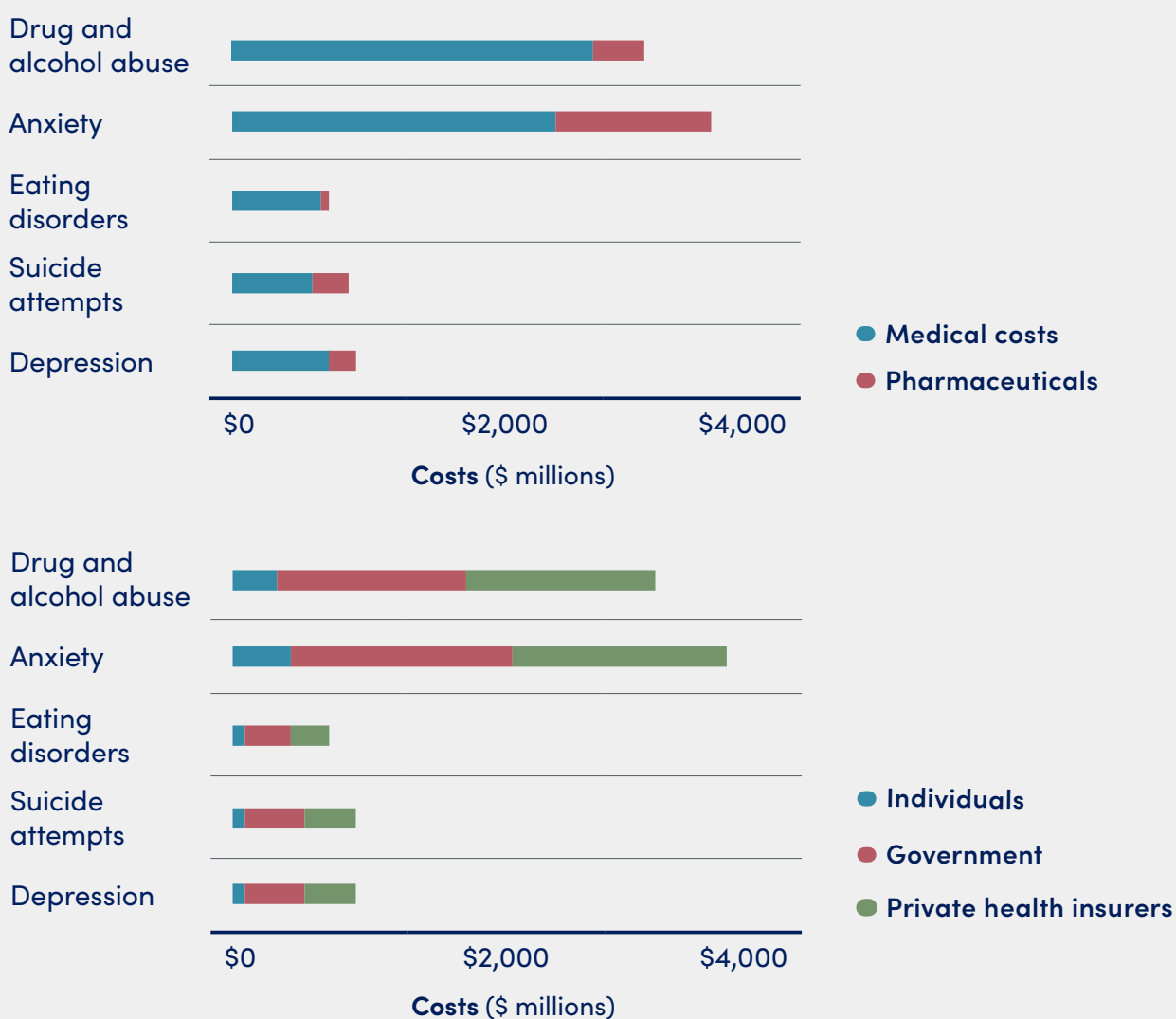
Source: Deloitte Access Economics analysis.

BOX 4.1: COMPLICATIONS OF COSMETIC SURGERY AND INDOOR TANNING

COSMETIC SURGERY

According to data from the American Society of Plastic Surgeons, there were over 2.6 million cosmetic surgery procedures done in 2019 (an increase of 44% on the year prior) and it is estimated that approximately $16.7 billion is spent on cosmetic procedures in the US each year.[92] There are a range of reasons people undertake cosmetic surgery. Sometimes, it is performed for reconstructive reasons. For example, a breast reconstruction following a mastectomy. However, evidence suggests many people undertake cosmetic surgery because they are dissatisfied with how they look.[93]

Not every cosmetic procedure has complications associated with it. Based on Wimalawansa et al (2014), it is estimated that 3.6% of all cosmetic surgery procedures on average lead to complications, such as infection and hemorrhage.[94] There may also be future health problems that are attributable to these procedures. The health costs of complications related to cosmetic surgery were estimated to cost the US economy $986 million in 2019.[xv] The majority of health system costs are for women ($858 million; 87%) rather than men ($128 million; 13%).

In rare cases, cosmetic surgery can also lead to death. While it can vary significantly by procedure, it is estimated that 0.002% of all cosmetic surgeries result in death, or 200 deaths per every 100,000 cosmetic procedures.[95] For context, the observed mortality rate for coronary artery bypass grafting between 2000-09 in the US was 1.9%.[96]

Of course, only a portion of these costs are related to body dissatisfaction (as opposed to other reasons for undertaking cosmetic surgery). Furthermore, the health costs attributable to complications of cosmetic surgery were not included in the main estimates, as they represent a second order impact and are not directly attributable to body dissatisfaction.

INDOOR TANNING

According to Guy et al (2017), roughly 5.2% of women and 2.2% of men use indoor tanning devices in the US. This is equivalent to 9.9 million people in the US every year.[97]

There is some evidence to suggest body dissatisfaction could be linked to higher indoor tanning use.[98] This, in turn, is associated with an increased risk of skin cancer. Indeed, one study found that use of indoor tanning before the age of 35 doubles the risk of melanoma.[99] Other types of skin cancers, including basal cell carcinomas (BCC) and squamous cell carcinomas (SCC),[100] have also been found to be linked to indoor tanning.

A 2018 study by Waters & Adamson found that more than 9,000 incident cases of melanoma, alongside 86,600 cases of SCC and 168,000 cases of BCC were attributable to the use of tanning devices in the US in 2015.[101]

The same study estimated that skin cancers attributable to indoor tanning cost the US economy $343.1 million.[102] Again, this cost is a second order impact and so was not included in the main estimates of the costs of body dissatisfaction.

xv Based on the median charge of complications related to cosmetic surgeries from Wimalawansa et al (2014). This was converted to a health cost figure based on a charge-to-cost ratio of 24% and inflated to 2019 dollars.

4.2.2.2 Productivity losses

Productivity losses associated with body dissatisfaction occur for various reasons but include productivity losses from attributable health impacts such as depression and anxiety, as well as reduced engagement in the labor market more broadly. Productivity losses also include loss of future earnings due to premature mortality and the estimated costs of informal caregiving from conditions attributable to body dissatisfaction. Depression, anxiety, and other attributed conditions may also lead to presenteeism and absenteeism costs. Productivity costs for smoking relate to the need to leave the workspace when smoking (presenteeism) and excess absenteeism.

Productivity losses due to body dissatisfaction were estimated to cost $68.6 billion. By condition, the largest share of productivity losses was caused by anxiety attributable to body dissatisfaction ($28 billion; 41% of total productivity losses). This was followed by depression (19% of total productivity losses) and suicide attempts (16% of total productivity losses) (see Table 4.3).

Table 4.3: **Annual productivity losses due to body dissatisfaction in 2019** ($, millions)

PRODUCTIVITY LOSSES	ABSENTEEISM	PRESENTEEISM	REDUCED EMPLOY- MENT	INFORMAL CARE	PREMATURE MORTALITY	TOTAL	COST PER PERSON WITH BD ($)
Depression	723	1,826	3,094	3,128	4,037	**12,808**	289
Suicide attempts	485	1,637	8,319	214	–	**10,655**	240
Eating disorders	974	2,778	2,208	1,026	1,300	**8,287**	187
Anxiety	1,429	1,323	13,269	11,634	437		633
Smoking	853	4,454	–	–	–	**5,307**	120
Drug and alcohol abuse	22	–	–	–	3,394	**3,417**	77
Total	**4,488**	**12,017**	**26,889**	**16,002**	**9,169**		**1,545**
Cost per person with BD ($)	101	271	606	361	207	1,545	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

Of the productivity losses, reduced participation in the labor market accounted for the largest share at $27 billion, representing 39% of total productivity costs (see Chart 4.4). In comparison, informal care and presenteeism accounted for $16 billion (23%) and $12 billion (18%) respectively. A detailed breakdown of the hours spent providing informal care for each health condition is provided in Appendix A. By cost bearer, 38% is borne by individuals with body dissatisfaction. Additionally, 17% of productivity losses are borne by employers and 16% by family and friends of people with body dissatisfaction (due to the provision of informal caregiving).

Chart 4.4: **Productivity costs due to body dissatisfaction in 2019, by health condition and cost component** (first panel) **and cost bearer** (second panel)

Legend (first panel):
- ● Absenteeism
- ● Presenteeism
- ● Reduced employment
- ● Informal care
- ● Premature mortality

First panel x-axis: $0, $15,000, $30,000 — Costs ($ millions)

Categories: Anxiety, Depression, Suicide attempts, Eating disorders, Smoking, Drug and alcohol abuse

Legend (second panel):
- ● Individuals
- ● Family and friends
- ● Employers
- ● Government

Second panel x-axis: 0%, 20%, 40%, 60%, 80%, 100% — Costs ($ millions)
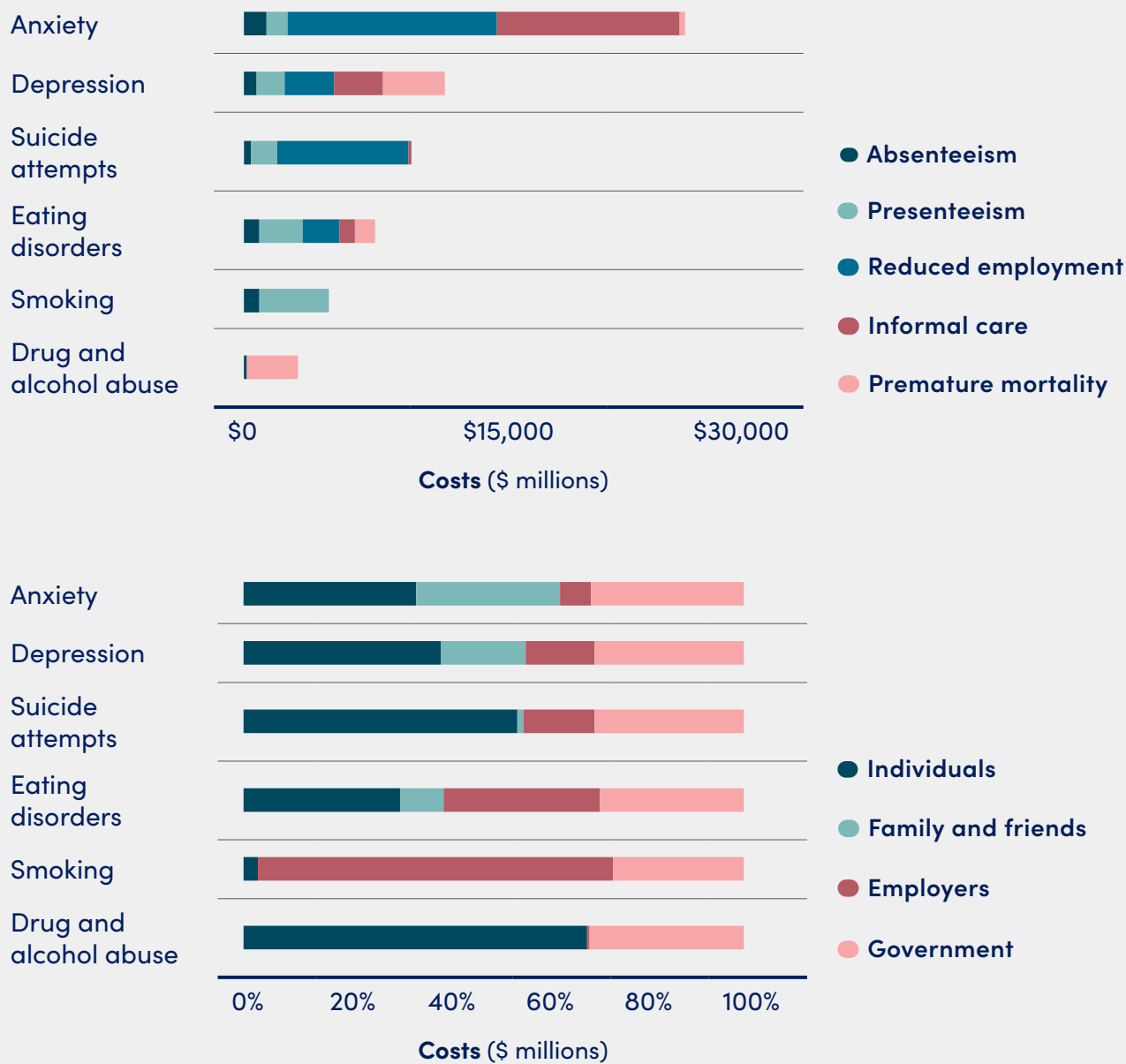
Source: Deloitte Access Economics analysis.

4.2.2.3 Loss of economic efficiency and other costs

In addition to the health expenditure and productivity impacts, there was also a loss in economic efficiency due to the health outcomes attributable to body dissatisfaction. The loss of efficiency arises due to the need to levy taxes to fund government expenditure and replace lost tax revenue (when compared to a situation where body dissatisfaction does not exist). Further detail on efficiency losses is provided in Appendix A.

The loss in economic efficiency due to body dissatisfaction reduced potential US output by as much as **$6.5 billion** in 2019, which stems from reduced taxation including lost caregiver taxes ($5.1 billion) and government expenditures on services ($1.3 billion) (see Table 4.4).

By condition, efficiency losses were largest for anxiety ($2.8 billion; 44% of total efficiency losses due to body dissatisfaction). This was followed by depression (17%) and attempted suicide (13%). These losses are borne by society.

Table 4.4: **Annual productivity losses due to body dissatisfaction in 2019** ($, millions)

EFFICIENCY LOSSES	REDUCED TAXATION	GOVERNMENT EXPENDITURES	TOTAL	COST PER PERSON WITH BD ($)
Depression	966	135	**1,101**	25
Suicide attempts	727	131	**858**	19
Eating disorders	568	103	**672**	15
Anxiety	2,305	528	**2,833**	64
Smoking	309	–	**309**	7
Drug and alcohol abuse	239	452	**691**	16
Total	**5,115**	**1,348**	**6,464**	**146**
Cost per person with BD ($)	115	30	146	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

4.2.3 Non-financial costs

4.2.3.1 Loss of well-being

In 2019, there were roughly 718,000 disability-adjusted life years (DALYs) due to body dissatisfaction. This represents the sum of years of life lost due to premature mortality (YLL) and years lived with disability (YLD) associated with conditions attributable to body dissatisfaction. Converting the DALYs to a dollar estimate using the value of a statistical life year (VSLY),[xvi] the total reduction in well-being was estimated to be $220.6 billion in 2019 (see Table 4.5), approximately equivalent to every American paying $670. DALYs were not estimated for smoking. Although smoking is a risk factor for various conditions and illnesses for which DALYs could

be estimated (e.g., lung cancer), these are not attributable to smoking directly. Similarly, YLDs were not estimated for drug and alcohol abuse. While certain conditions related to alcohol and drug abuse (such as substance use disorder) do certainly impact quality of life on an ongoing basis, this study considered only the direct impacts (such as hospitalizations or deaths that are directly attributable, for example due to drug overdoses). YLLs were not estimated for suicide attempts as this cost only considers attempts that did not result in loss of life.[xvii] Suicides resulting in loss of life attributable to body dissatisfaction are captured through depression and anxiety.

Table 4.5: **Loss of well-being due to body dissatisfaction in 2019**

CONDITION	YLLS (DISCOUNTED)	YLDS	DALYS	DALYS ($M)	DALYS PER PERSON ($)
Depression	74,669	225,198	299,867	**92,109**	2,076
Suicide attempts	–	3,551	3,551	**1,091**	25
Eating disorders	34,861	137,651	172,512	**52,990**	1,194
Anxiety	10,628	162,198	172,826	**53,086**	1,196
Drug and alcohol abuse	69,466	–	69,466	**21,338**	481
Total	**189,624**	**528,598**	**718,221**	**220,614**	**4,972**
Per person (number, $)	0.004	0.012	0.016	4,972	

Source: Deloitte Access Economics analysis. Note: components may not sum to totals due to rounding.

xvi For this report a VSL of $307,167 was used. This was calculated based on the mid-point of the Office of Management and Budget recommendation in 2003 (a VSL of $5.5 million) and

xvii Suicides resulting in loss of life attributable to body dissatisfaction are captured through depression and anxiety.

DALYs were estimated to be higher in women than for men (see Chart 4.5), consistent with the higher prevalence of body dissatisfaction among women in the US. On a per person basis, the loss of well-being is highest for people with body dissatisfaction aged between 20 to 29 years of age. This is due to the devastating impacts of depression and the relatively high prevalence of suicide among this age group.

Chart 4.5: **Financial costs of body dissatisfaction by attributed condition and age group** (in years, **$ billions** (left axis) **and prevalence of body dissatisfaction by age group** (right axis)
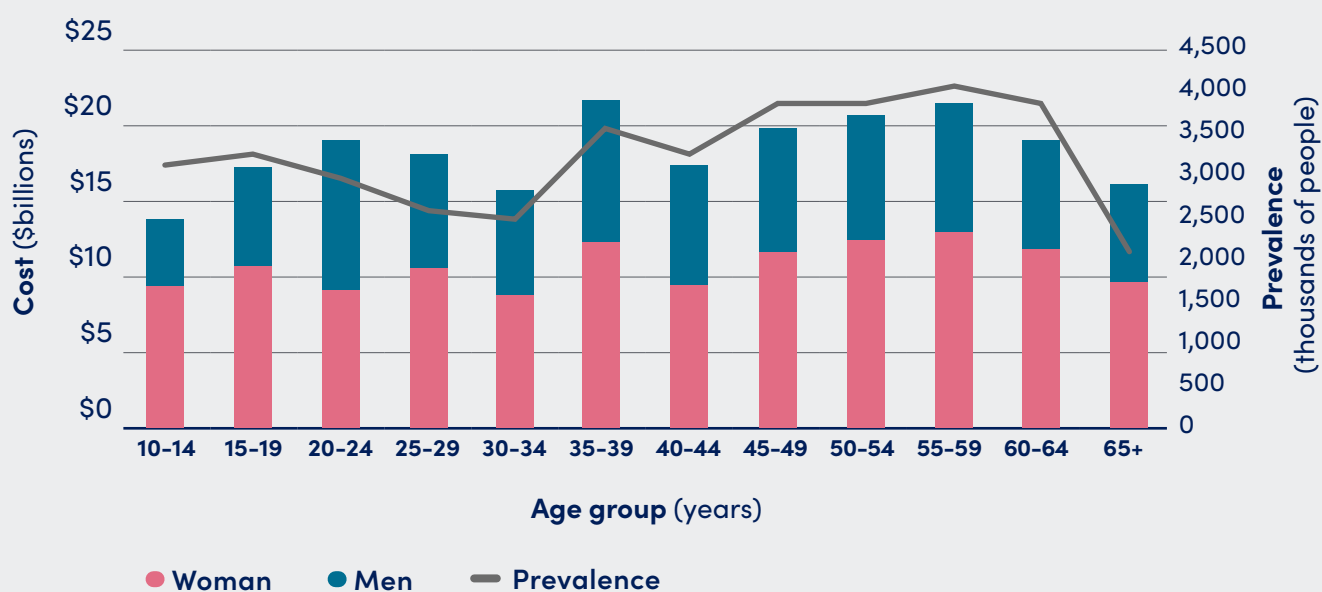
Source: Deloitte Access Economics analysis.
Note: prevalence is shown on the right axis while the other series are shown on the left axis.

4.2.4 Sensitivity analysis

Sensitivity analysis was performed to test how variations in certain parameters impacts overall results. Sensitivity analysis helps identify how responsive the model is to changes in key parameters. One-way sensitivity analyzes were conducted on prevalence, the VSLY, PAFs (and therefore the underlying risk of developing a condition), and estimated unit costs (health system and productivity costs). Input values have been varied by a consistent amount across model inputs to show how sensitive the results are to particular inputs.

The results of the sensitivity analysis showed that varying the PAF had the largest impact on the results, with total costs – economic and non financial – ranging between $189.3 billion and $407.5 (see Appendix Table B.1).

Three additional scenarios were considered:

01. Studies do not always include **efficiency losses** – the costs associated with the act of taxation and transfers, which distorts incentives and results in a loss of economic efficiency. Excluding efficiency losses, the total social and economic cost of body dissatisfaction was estimated to be $298.2 billion, instead of $305 billion.

02. The evidence for risky behavior from body dissatisfaction does not tell the complete picture of the possible impacts associated with drug and alcohol use or smoking. When including **possible long-term effects and risk for future loss of healthy life from smoking** as an example, the total social and economic cost of body dissatisfaction was estimated to be $328 billion.

03. Costs of government programs – such as prevention or awareness programs – associated with conditions/illnesses attributable to body dissatisfaction were not explicitly considered in this analysis. The inclusion of these costs was tested using tobacco control program funding for smoking as an example. Under a scenario where tobacco control program funding is included, the total social and economic cost of body dissatisfaction was estimated to be $306.4 billion.

5 The economic and social cost of appearance-based discrimination.

$501 billion

**$269 billion
Financial
costs**

**$233billion
Loss of
well-being**

HEALTH
OUTCOMES

LABOR
MARKET
OUTCOMES

OTHER LIFE
OUTCOMES

5 The economic and social cost of appearance-based discrimination

Key findings

- The **total cost of appearance-based discrimination was $501 billion** in 2019. This includes $269 billion in financial costs, and $232 billion in lost well-being. The financial costs are equivalent to 1.3% of US GDP in 2019.

- The total costs associated with weight discrimination were $430 billion in 2019, which included $206 billion in financial costs and $224 billion in lost well-being. Skin shade discrimination costed $71 billion in total, which included $63 billion in financial costs and $8 billion in lost well-being.

- Experiencing appearance-based discrimination can lead to a range of poorer outcomes for the individual. This includes **poorer health outcomes** (by leading to an increased risk of particular conditions such as anxiety, depression, obesity, among others), as well as **poorer labor-market outcomes** by lowering wages and employment opportunities. More broadly, it can also cause a deterioration in other life outcomes such as increasing the risk of school suspension and increasing the probability of receiving a prison sentence.

- The cost of appearance-based discrimination in 2019 was primarily borne by **individuals and their families** (58%), and the **US government** (30%).

5.1 Impacts of appearance-based discrimination

Appearance-based discrimination has far reaching impacts on the individual experiencing discrimination as well as on broader society. These impacts can occur in a variety of settings, such as at school or the workplace, and can be experienced by anyone such as by employees or someone seeking medical care. The forms of appearance-based discrimination costed in this report are weight discrimination and skin shade discrimination. In addition, this report also provides a qualitative discussion of the impacts of natural hair discrimination.

Appearance-based discrimination is captured in two ways:

- By comparing differences in outcomes for people that have experienced appearance-based discrimination, compared to those that have not. Differences in health, labor market, and other life outcomes (e.g., educational attainment and justice system) were explored.
- Through the health impacts attributable to experiences of appearance-based discrimination (e.g., depression or anxiety).

These are summarized in Figure 5.1.

Figure 5.1: **Outcomes of appearance-based discrimination**

HEALTH OUTCOMES
- Healthcare avoidance
- Lower quality of care

Health impacts resulting from an experience of appearance-based discrimination

LABOR MARKET OUTCOMES
- Wage losses
- Employment losses

OTHER LIFE OUTCOMES
- Incarceration
- Lower educational attainment
- School suspensions

HEALTH IMPACTS

- **Depression**
- **Anxiety**
- **Obesity**
- **Hypertension**
- **Mortality**
- **Psychotic experiences**
- **Risky drug use**
- **Mood disorders**
- **Physiological dysregulation**
- **Social phobia**
- **Post-traumatic stress disorders**
- **Sensory dysfunction**
- **Cardiovascular and cardiometabolic disorders**

Source: Deloitte Access Economics.

The following sections discuss these impacts in further detail, drawing on the relevant literature. Various factors can affect the impacts that are attributable to appearance-based discrimination, such as type of discrimination, individual characteristics, perpetrator characteristics, and research design. It has not been possible to explore all these factors in detail, however key differences are noted in the sections below.

Furthermore, the use of controls also varied across the research. Typically, studies controlled for key demographic variables, such as age, gender, education, and income.[xviii] For skin shade discrimination, only those studies that controlled for race were included. Again, we have not attempted to list controls for each study but instead focus on key confounding factors and their controls where relevant.

5.1.1 Health outcomes

Appearance-based discrimination can lead to **poorer health outcomes** through various mechanisms:

- Healthcare providers might deliver a poorer quality of care to someone based on their appearance.[103]
- Discriminatory experiences in the healthcare system can lead to distrust, healthcare avoidance or low engagement from a patient, which can impact their treatment through delayed diagnoses and substandard care.[104,105,106,107] Patients may also blame themselves for their stigmatized identity, which can have consequences for their mental health.[108]
- Discriminatory experiences can also lead to negative health impacts such as depression, anxiety, weight gain and even premature mortality.[109,110,111,112]

The current body of evidence does not allow for these mechanisms to be disentangled – for example, facing weight stigma when consulting a medical professional may result in healthcare avoidance and also cause anxiety.

5.1.1.1 Mental health outcomes

Skin shade discrimination can lead to poorer mental health outcomes. For example, evidence suggests that those who selfrate their skin as the darkest shade are 1.54 times more likely to report being depressed, compared to those who rate themselves as being of the lightest skin shade, within the same race.[113] Another study found there was a greater odds of lifetime suicidal ideation and suicide attempts resulting from skin shade discrimination when perpetrated by members of the same community.[114] More broadly, skin shade discrimination can lead to differences in overall health outcomes, with evidence from Puerto Rico suggesting those with lightest skin shades fare better on a measure capturing overall health, compared to those with the darkest skin shades.[115] Another study focused on Puerto Ricans revealed that it is major instances of discrimination, as opposed to acts of everyday discrimination, that have severe physiological health consequences, such as allostatic load.[116]

The likelihood of depression is also greater for people who perceive weight discrimination. Robinson et al (2017) show that even after controlling for risk factors of depression, those who have perceived weight discrimination are 1.5 times more likely to suffer from clinically significant depression than those who do not.[117]

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xviii One potential confounder is the wealth and network effects associated with Black people with lighter skin shades having one white parent. Controls for income and education help to control for this effect.

The mental health impacts of weight discrimination also tend to be more severe for people of a higher weight. For example, people who experienced weight discrimination and were of a high weight were almost three times more likely to suffer from any anxiety disorder, compared to those who were not a high weight.[118]

Among children, weight-based bullying and teasing at school is one of the most common reasons for youth victimization in the US, and can cause disordered eating, suicidal ideation, and a range of other poor health outcomes.[119,120,121,122] Hair discrimination has also been shown to lead to poorer mental health outcomes. The "Good Hair" Study by Perception Institute measured the level of anxiety that women faced about their hair, finding that Black women were on average 13 percentage points more anxious about their hair than white women.[123]

5.1.1.2 Physical health outcomes

Alongside poorer mental health outcomes are poorer physical health outcomes, such as hypertension, premature mortality, and having a body mass index (BMI) of 30kg/m2 or higher.[xix] On average, Black people with the darkest skin shade are 14 percentage points more likely to develop hypertension compared to Black people with the lightest skin shade.[124] Skin shade has also been found to be a significant determinant of mortality among Black people, where respondents with medium and dark brown skin had significantly higher rates of all-cause mortality than those with lighter skin.[125]

Weight discrimination can also lead to a higher likelihood of having and maintaining a BMI of 30kg/m2 or higher. Sutin and Terracciano (2013) show that people who experienced weight discrimination were 1.72 times more likely to develop a BMI of 30kg/m2 or higher, and 1.69 times more likely to maintain a BMI of 30kg/m2 or higher (if they already had a BMI in this range), compared to those who did not perceive weight discrimination.[126]

Weight discrimination also leads to increased risk of mortality, higher inflammatory markers, engaging in risky health behaviors, dementia, and physical inactivity, among others.[127,128,129,130,131,132] These studies controlled for BMI to help isolate the impact of weight discrimination as distinct from an individual's current weight status.

Weight stigma is also associated with a host of negative impacts, such as greater risk of diabetes, higher cortisol levels, higher oxidative stress levels, and disordered eating.[133,134,135]

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xix An adult with a body mass index (BMI) of 30kg/m2 or higher is classified by CDC as falling within the obesity range.

Weight stigma differs from weight discrimination in that it captures the negative attitudes in society surrounding weight, which can manifest in forms that may not result in an act of discrimination (e.g., societal prejudices and stereotypes).[136]

There is some evidence pointing to the health risks associated with the use of particular hair products, which may be more likely to be used or used more frequently by those facing hair discrimination. For example, a study by National Institute of Environmental Health Sciences (NIEHS) found that women who used chemical hair straighteners at least every five to eight weeks were 30% more likely to develop breast cancer.[137] Another study found that the Black community is more likely to be exposed to dangerous chemicals in hair products than the white community, leading to a greater risk of developing health conditions associated with exogenous estrogen and endocrine disruptors. A number of factors play into the greater exposure, including frequency of use, product purpose and the hair styles they are targeted to, and the proportion of the community using the products.[138]

Further, the pressure that black women feel to maintain their hair can lead to them avoiding exercise at far higher rates than white women. In fact, one in three black women report that their hair is the reason that they haven't exercised, compared to one in ten white women.[139] This can lead to serious health outcomes in the long run as exercise plays a key role in avoiding illnesses like heart disease, cancer, etc.

5.1.2 Labor market outcomes
Appearance-based discrimination can lead to poorer labor market outcomes such as lower wages, fewer employment opportunities and being perceived as less professional. But it may also have broader societal costs such as lost or lower income and efficiency losses. Skin shade discrimination can lead to wage penalties, with some estimates suggesting males with dark skin shades face wage penalties as high as 6.3% compared to males with light skin shades, within the same race or ethnic group.[140] A study focusing on the immigrant population in the United States showed that non-Black Latin American immigrants with dark skin shades face a wage penalty, across all genders.[141] Skin shade discrimination can also affect occupation, with one study showing that Mexicans and Cubans with darker skin shades face lower occupational prestige scores than Mexicans and Cubans with lighter skin shades, even after controlling for factors that can influence labor market performance.[142]

Weight discrimination can also lead to wage penalties, but these tend to vary by gender. The wage penalty for women tends to increase as their weight increases, whereas men face wage penalties if they have a high or a low weight.[143]

Appearance-based discrimination can also influence jobrecruitment. An examination of four studies demonstrated that Black women with natural hairstyles were perceived to be less professional, less competent, and less likely to be recommended for job interviews than both white women with curly or straight hair and Black women with straight hair.[144]

Importantly, while this study focuses on natural hair bias against Black women, there are numerous examples of hair discrimination affecting other groups. For example, Black male students have been suspended and denied participation in school sports on the grounds that their locs are too long.[145] Waitresses wearing blonde wigs received more tips from male patrons than the same waitresses wearing red, brown or dark colored wigs.[146]

5.1.3 Other life outcomes

Beyond poorer health and employment outcomes, appearance-based discrimination can lead to a host of other life consequences including in the justice and education systems. Experiences of appearance-based discrimination can also impact behavior.

5.1.3.1 Justice system

- Appearance-based discrimination can lead to an **increased likelihood of receiving a prison sentence**.[147] As an example, one study found that a one-unit increase in the darkness of an individual's skin shade has been shown to correspond with a 15% increase in the likelihood of receiving a prison sentence.[148]

- It can also affect the **length of a prison sentence**.[149,150,151,152] For example, one study estimated that Black people with medium and dark-skin shades receive prison sentences that are 4.8% longer than the sentences received by white people, but found no significant differences in sentence length between Black people with light skin shades and white people.[153]

- It may lead to increased frequency of being stopped and arrested by police. Black and Latino people with darker skin shades are more likely to be perceived as being dangerous by the police than people with lighter skin shades, increasing their odds of being arrested.[154] [xx]

Members of the public might also be more likely to report people with darker skin shades to the police or judge them more harshly when serving on juries. A study conducted with undergraduate students found that Black people with dark skin shades were more often perceived to be aggressive than Black people with lighter skin shades.[155] Given undergraduates can go on to become members of a jury, this might have implications for the outcome of legal trials.

xx This study presented results for Blacks and Latinos only and did not ask Latinos to separately identify their race (see Section 2.5).

5.1.3.2 Education system

Appearance-based discrimination can impact educationalattainment,[156,157,158] test scores,[159,160] school suspensions,[161,162] school attendance,[163] and participation in extracurriculars.[164] These can pose future costs for an individual through income instability in the future or poor health.

Asian-American males with light skin shades are 32% more likely to have a college education than Asian-American males with darker skin shades, even after controlling for parental income, parental educational attainment, school level standardized scores, and other relevant factors that might affect college education. The result is even greater for Asian-American females with light skin shades, who are 60% more likely to get a college education than Asian-American females with darker skin shades.[165] The proportion of these impacts that are a direct result of appearance-based discrimination is unclear.

Furthermore, students with dark skin shades are more likely to be suspended than students with light skin shades within the same race or ethnic group. A 2013 study estimated that the likelihood of suspension for African American male students of the darkest skin shades was 45% higher than the rate for African American male students of the lightest skin shades. For African American female students, the likelihood of suspension was 107% higher for the darkest skin shade compared to the lightest shade.[166] This additional risk is above and beyond the already disparate targeting of African American children for suspension.

Lower test scores are not limited to skin shade discrimination. Weight-based victimization has also been linked to higher odds of skipping school and receiving lower grades by 5% per teasing incident.[167]

5.1.3.3 Risky behavior

Appearance-based discrimination can also impact people's behavior. People who have perceived weight discrimination are more than twice as likely to engage in risky sexual or drug use behaviors than those who have not.[168] They are also twice as likely to drive while intoxicated.[169]

Case study: **Lived experiences of skin shade discrimination**

Chris is a 39-year-old Black Latino man working for the New York City Fire Department. He first became aware of beauty ideals as a young child who loved superheroes, but found the hero was always a "blonde haired, blue eyed, white American." Chris has been treated differently due to his skin shade in clothing stores, electronic shops, on the road, at the car dealership, on his job.

"Of course, when you have melanin in your skin, you're going to be treated different, looked at, you're going to be followed in the store. Happens to this day. You go into a dealership and the salespeople treat you a little different... They think you don't have a down payment or have horrible credit."

Of major concern to Chris is when he gets treated differently while performing his job as a paramedic. He recounts examples of people not wanting to be treated by him in emergency situations, waiting instead for someone they're comfortable with to take care of them. Chris feels it is because of his skin shade, along with religious and cultural differences. This impacts how Chris can perform patient care as a paramedic, where timely medical attention can make a significant impact on patient safety. To reduce the impact of beauty ideals in society, Chris believes in increasing the diversity of people

represented in media, to celebrate different body types and cultures.

Chris's philosophy is shared by **Layla, a 43-year-old African American woman with some Afro-Caribbean lineage**. Layla is a psychotherapist in Manhattan and has noticed narrow beauty ideals represented in advertising of beauty products, social media, fairy tales for children and even song lyrics.

Like Chris, Layla first became aware of beauty ideals as a young child in the 1980s, when she would notice while shopping with her parents, that store shelves were stacked with dolls that were predominantly white. "It was a bit disheartening and confusing because I wasn't a white little girl. And wanted to know why they didn't have any dolls that looked like me." To find dolls who represented people of color, Layla's parents sought out special vendors and distributors who sold dolls with Afro-textured hair or darker skin shades.

"It was extraordinarily important that I had dolls with coily, Afro-textured hair, brown skin, because my dad and I would play with the dolls and create little scenarios and narratives. And it was important for me as a little girl to see what I could be or what I could look like as an adult."

Layla believes beauty ideals in the United States are improving over time, but Layla still faces skin shade discrimination in her day-to-day life.

"I've been in stores and I've been followed around, I've been passed by cabs...or I've gotten into cabs and they asked my l ocation, my destination, and they made assumptions around my destination and their safety...I have more examples than I could possibly count or recount here today."

Layla says her experiences are exhausting and have led to her being hypervigilant wherever she's going to assess the level of danger around her. She finds it hard to plan for vacations for the same reason, without checking the proportion of people of color in the communities she intends to visit. Her experiences have also impacted her self-esteem and caused her to feel low on several occasions. Layla says that while once she was more extroverted and felt free to travel, overtime she has become more reclusive. Layla has also compromised her career advancement by leaving a job on account of skin shade discrimination. For Layla, society will be able to embrace diversity when it moves away from centering whiteness as the standard.

5.2 Costs of appearance-based discrimination

Modelling for this report finds that the economic and social cost of appearance-based discrimination in 2019 was $501.3 billion. This is made-up of $268.7 billion in financial costs, and $232.5 billion in non-financial costs, reflecting the loss in well-being associated with appearance-based discrimination from worse health outcomes. Women bore more than two-thirds (63% or $317 billion) of the costs of appearance-based discrimination.

The financial costs of appearance-based discrimination made up approximately 54% of the total costs of appearance-based discrimination, at $268.7 billion. The financial costs of appearance-based discrimination were equivalent to 1.3% of the US GDP in 2019 ($21.4 trillion) and would have covered two-thirds (66%) of the total national out-of-pocket spending on healthcare in the US (estimated to be $406.5 billion in 2019).[170]

By type of discrimination, the **financial costs of weight discrimination totaled $205.9 billion, while for skin shade discrimination it was $62.8 billion**. Financial costs were largest for labor market outcomes ($181.6 billion) and health outcomes ($84.5 billion). The breakdown by type of discrimination and outcome is provided in Table 5.1.

Figure 5.2: **Economic and social costs of appearance-based discrimination, 2019** (billions)

$269 billion Financial cost

$233 billion Loss of well-being

Source: Deloitte Access Economics.

Table 5.1: **Financial costs of weight discrimination and skin shade discrimination by outcome type in 2019** ($ millions)

OUTCOME	TOTAL FINANCIAL COST	COST PER PERSON ($)	PROPORTION OF TOTAL FINANCIAL COST (%)
Weight discrimination			
Health outcomes	82,837	1,261	31
Labor market outcomes	123,082	1,874	46
Subtotal	**205,919**	**3,135**	**77**
Skin shade discrimination			
Health outcomes	1,627	25	1
Labor market outcomes	58,503	891	22
Other life outcomes – incarceration	2,686	41	1
Subtotal	**62,816**	**956**	**24**
Total	**268,735**	**4,091**	**0.016**

Source: Deloitte Access Economics analysis. Note: cost per person refers to cost per person that experiences appearance-based discrimination. Components may not sum to totals due to rounding.

It was estimated that individuals and their families and friends bore 58% of total financial and economic costs, while government, employers, and the rest of society each bore 30%, 3% and 9% of total financial and economic costs respectively, as shown on the right.

When the non-financial cost capturing the loss of well-being is added to these financial costs, the health costs for individuals increase significantly. Together, the financial costs and loss of well-being costs form the total societal cost of appearance-based discrimination. A breakdown of the total cost by outcome category and five-year age group is shown in Chart 5.2.

Chart 5.1: **Financial costs of appearance-based discrimination by payer in 2019** ($ millions)

Payer	Cost
Individuals	$1,43,560
Governments	$81,911
Society/Other	$13,855
Friends and family (carers)	$11,012
Healthcare payers	$9,622
Employers	$8,774
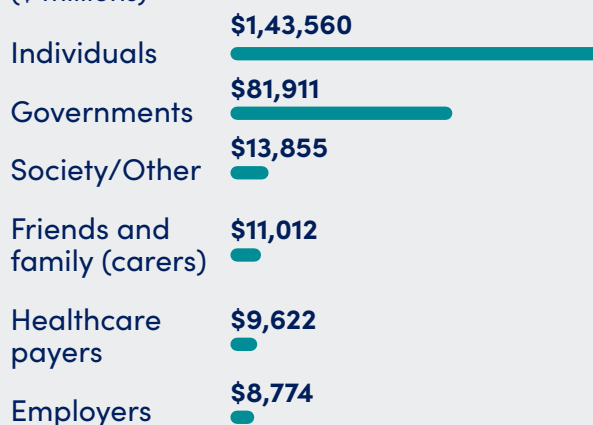
Source: Deloitte Access Economics analysis.

Chart 5.2: **Total cost of appearance-based discrimination by outcome category and age group** (in years), ($ billions)
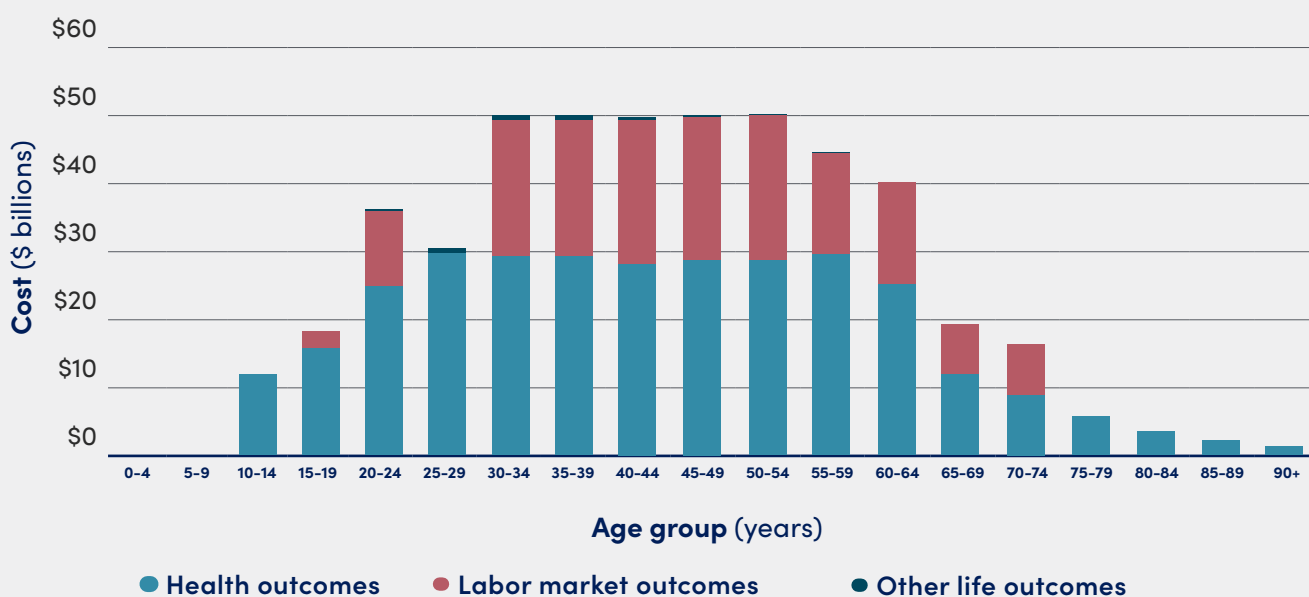
Source: Deloitte Access Economics analysis.

The cost of appearance-based discrimination is highest for people between the ages to 25 and 54. This is due to the employment and wage differentials faced by this group, in addition to poorer health outcomes. Further, the rate of incarceration is also highest for people aged 20 to 54 years further increasing the costs for this age category through prison outcomes. The following sections provide further detail regarding the costs across **health outcomes, labor market outcomes and other life outcomes**.

5.2.1 Health outcomes

The total social and economic cost associated with the health outcomes of appearance-based discrimination were estimated to be $317 billion in 2019. This was made up of health system costs ($21.9 billion), productivity losses ($39.3 billion), informal care costs ($15.8 billion), efficiency losses ($7.5 billion) and loss of well-being ($232.5 billion).

Table 5.2: **Costs of health outcomes attributable to weight and skin shade discrimination in 2019** ($, millions)

	HEALTH SYSTEM COSTS	PRODUC-TIVITY LOSSES	INFORMAL CARE COSTS	EFFICIEN-CY LOSSES	LOSS OF WELL-BEING	TOTAL	COST PER PERSON ($)
Skin shade discrimination	210	995	296	126	8,417	**10,044**	**153**
Weight discrimination	21,708	38,300	15,484	7,345	224,116	**306,953**	**4,673**
Total	**21,919**	**39,294**	**15,780**	**7,471**	**232,534**	**316,997**	**4,826**
Cost per person ($)	334	598	240	114	3,540	4,826	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

5.2.1.2 Health system costs

The total 2019 expenditure of $21.9 billion on health services was equivalent to a cost of $334 per person who experienced appearance based discrimination in 2019. By type of discrimination, the total health system costs attributable to skin shade discrimination was $0.21 billion from depression and hypertension, and that attributable to weight discrimination was $21.7 billion from depression, anxiety, obesity and drug abuse (see Appendix Table A.24). By health impact, anxiety ($4.6 billion), obesity

($9.5 billion) and drug abuse ($7.2 billion) were the primary drivers of health system expenditure attributable to appearance-based discrimination. Consistent with all other costs reported in this study, costs for obesity relate to those which are attributable to appearance-based discrimination (i.e., causing someone to gain weight or maintain a high weight). Notably, obesity due to weight discrimination accounted for 44% of the total health system costs resulting from appearance-based discrimination.

Table 5.2: **Costs of health outcomes attributable to weight and skin shade discrimination in 2019** ($, millions)

HEALTH IMPACT	MEDICAL COSTS	PHARMACEUTI-CAL COSTS	TOTAL	COST PER PERSON ($)
Anxiety	3,119	1,474	**4,593**	70
Depression	337	109	**446**	7
Obesity	6,491	3,052	**9,542**	145
Drug abuse	6,380	859	**7,239**	110
Hypertension	66	33	**99**	2
Total	**16,393**	**5,525**	**21,919**	334
Cost per person ($)	250	84	334	114

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

Chart 5.3: Health system costs attributable to appearance-based discrimination in 2019, by health condition and cost bearer, ($ millions)
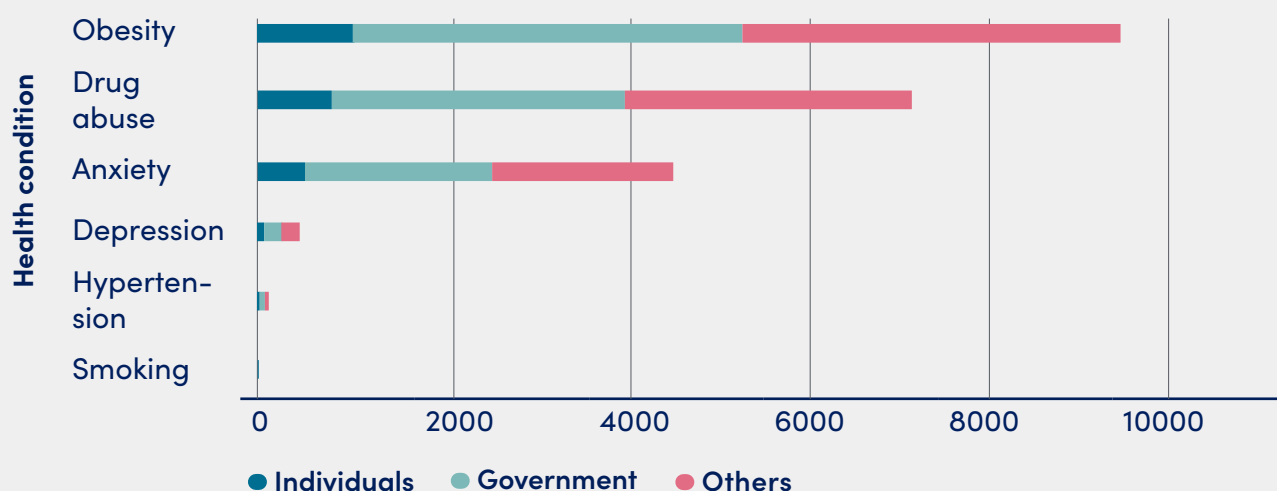
Source: Deloitte Access Economics analysis.

Black women with natural hair report greater levels of hair-related anxiety than white women.[171] This was not costed because it is unclear what proportion is due to appearance-based discrimination, and the extent to which these feelings progress into clinical anxiety. However, if a portion is attributable to hair discrimination, it might pose notable implications for impacts and costs, given the significant burden of disease associated with anxiety. More research is needed to estimate the portion of hair-related anxiety that is due to natural hair style discrimination.

5.2.1.3 Productivity losses

The productivity losses associated with the health consequences of appearance-based discrimination capture premature mortality, lower productivity at work (absenteeism and presenteeism) and costs that arise when a family member or friend provides care to someone because of their condition. Both premature mortality and lower productivity at work stem from the health conditions developed by workers as a result of appearance-based discrimination. For example, depression and anxiety might lead to reduced engagement of workers, leading them to take days off work or find themselves unable to perform as well as they otherwise would while at work.

Finally, where a condition that developed as a result of the discrimination required informal care, this resulted in further losses under the assumption that there is an opportunity cost of the caregiver's time (i.e. they may have otherwise been earning a wage). A detailed breakdown of the hours spent providing informal care for each health condition is provided in Appendix A. The productivity losses associated with health conditions developed were $55 billion. Of this, reduced employment accounted for $19.0 billion (34.6%), loss of lifetime earnings cost $7.5 billion (13.6%), absenteeism cost $3.4 billion (6.3%) and presenteeism cost $9.3 billion (16.9%). Further, the productivity losses of informal caregiving due to appearance-based discrimination was $15.8 billion in 2019. By type of discrimination, productivity losses associated with weight discrimination totaled $53.7 billion, while for skin shade discrimination they were $1.3 billion (see Appendix A).

Overall, the productivity losses were mostly due to anxiety attributed to appearance-based discrimination (see Chart 5.4). It is noted that obesity and hypertension are associated with other conditions (such as diabetes and heart failure). However, costs attributable to second order impacts were not included in this analysis, resulting in a relatively low cost for obesity and hypertension. Despite also being a risk factor for other conditions, smoking presents a high cost due to the need to leave the workspace when smoking (presenteeism).

Chart 5.4: **Proportion of productivity losses associated with health outcomes, by outcome, 2019**

Outcome	Percentage
Anxiety	56.3%
Smoking	16%
Drug abuse	13%
Depression	10.5%
Obesity	4.1%
Hypertension	0.2%
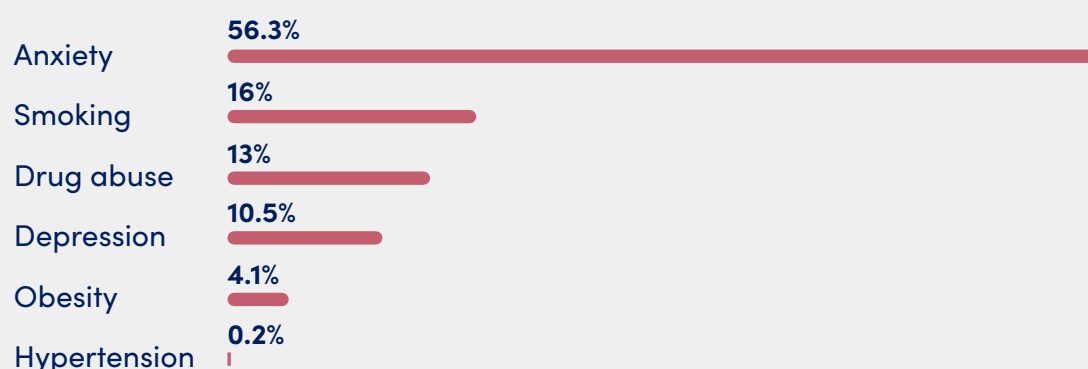
Source: Deloitte Access Economics analysis.

Table 5.4: **Annual productivity losses due to health outcomes of appearance-based discrimination, in 2019** ($ millions)

PRODUCTIVITY LOSSES	REDUCED EMPLOY-MENT	ABSEN-TEEISM	PRESEN-TEEISM	PREMA-TURE MOR-TALITY	INFOR-MAL CAR-EGIVING	TOTAL	COST PER PERSON ($)
Anxiety	17,755	1,760	1,630	960	14,328		555
Depression	1,294	353	963	1,508	1,451	**5,569**	85
Smoking	–	804	5,501	–	–	**6,304**	96
Obesity	–	478	1,141	–	–	**1,618**	25
Drug abuse	–	52	–	5,038	–	**5,090**	77
Hypertension	–	4	58	–	–	**61**	1
Total	**19,049**	**3,450**	**9,291**	**7,506**	**15,780**		**838**
Cost per person ($)	290	53	141	114	240	838	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

5.2.1.3 Productivity losses

In addition to the health expenditure and productivity impacts, there was also a loss in economic efficiency due to the health outcomes attributable to appearance-based discrimination. The loss of efficiency arises due to the need to levy taxes to fund government expenditure and replace lost tax revenue (when compared to a situation where appearance-based discrimination does not exist). The loss in economic efficiency from the health impacts of appearance-based discrimination reduced potential US output by as much as $7.5 billion in 2019, representing 54% of the total loss in economic efficiency across all outcome categories (health, labor market and other outcomes). Of the total $7.5 billion, individual income, caregiver tax, and company tax revenue forgone accounted for $4.2 billion, and government expenditures accounted for $3.3 billion. These losses are borne by society.

Table 5.5: **Annual reduction in economic efficiency due to health outcomes of appearance-based discrimination in 2019** ($ millions)

HEALTH OUTCOME	REDUCED TAXATION	GOVERNMENT EXPENDITURES	TOTAL	COST PER PERSON ($)
Anxiety	2,968	684	**3,652**	56
Depression	421	66	**487**	7
Smoking	367	–	**367**	6
Obesity	94	1,420	**1,514**	23
Risky drug use	355	1,077	**1,433**	22
Hypertension	4	15	**19**	0.3
Total	**4,208**	**3,262**	7,471	114
Cost per person ($)	64	50	114	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

Of the total $7.5 billion in efficiency losses, $7.3 billion were due to the health impacts associated with weight discrimination and $126 million were due to the health impacts associated with skin shade discrimination (see Appendix Table A.26).

5.2.1.5 Loss of well-being

More than 757,000 years of healthy life were lost due to the health impacts of appearance-based discrimination in the US in 2019. Converting the DALYs to a dollar estimate using the value of a statistical life year (VSLY), the total reduction in well-being was valued at $232.5 billion in 2019. The greatest loss of well-being cost was associated with anxiety, at $98.9 billion (42.5%), which was followed by obesity at $53.6 billion (23.1%), depression at $41.4 billion (17.8%) and drug abuse at $38.6 billion (16.6%) (Table 5.6).

The total loss of well-being associated with weight discrimination was $224.1 billion, reflecting lost well-being from depression ($32.9 billion), anxiety ($98.9 billion), obesity ($53.6 billion) and drug abuse ($38.6 billion). The total loss of well-being associated with skin shade discrimination was $8.4 billion, reflecting lost well-being from depression ($8.4 billion) (See Appendix, Table A.27).

Table 5.6: **Loss of well-being due to appearance-based discrimination in 2019**

CONDITION	YLLS (DISCOUNTED)	YLDS	DALYS	DALYS ($M)	DALYS PER PERSON ($)
Anxiety	21,685	300,355	322,040	**98,920**	1,506
Depression	33,947	100,883	134,830	**41,415**	631
Obesity	–	174,574	174,574	**53,623**	816
Drug abuse	125,583	–	125,583	**38,575**	587
Total	**181,215**	**575,812**	**757,027**	**232,534**	**3,540**
Per person (number, $)	0.003	0.009	0.012	3,540	

Source: Deloitte Access Economics analysis. Note: components may not sum to totals due to rounding. Discounting means that YLLs will sum with YLDs to undiscounted DALYs, but in converting using the VSLY future YLLs are discounted so the result is not a simple multiplication of DALYs and the VSLY. Missing values for the YLLs for obesity and the YLDs for drug abuse reflect that there are none associated with these conditions.

As in the case for body dissatisfaction, DALYs were not estimated for smoking or hypertension, as DALYs are not directly attributable to these impacts but are instead attributable to risk factors associated with these conditions.[xxi] Similarly, YLDs were not estimated for drug abuse. Suicides resulting in loss of life attributable to appearance-based discrimination are captured through depression. On average, the loss of well-being for men and women were similar, but this varied slightly by age group, as shown in the Chart below.

Chart 5.5: **Loss of well-being for appearance-based discrimination in 2019, by age group and gender** ($ billions)
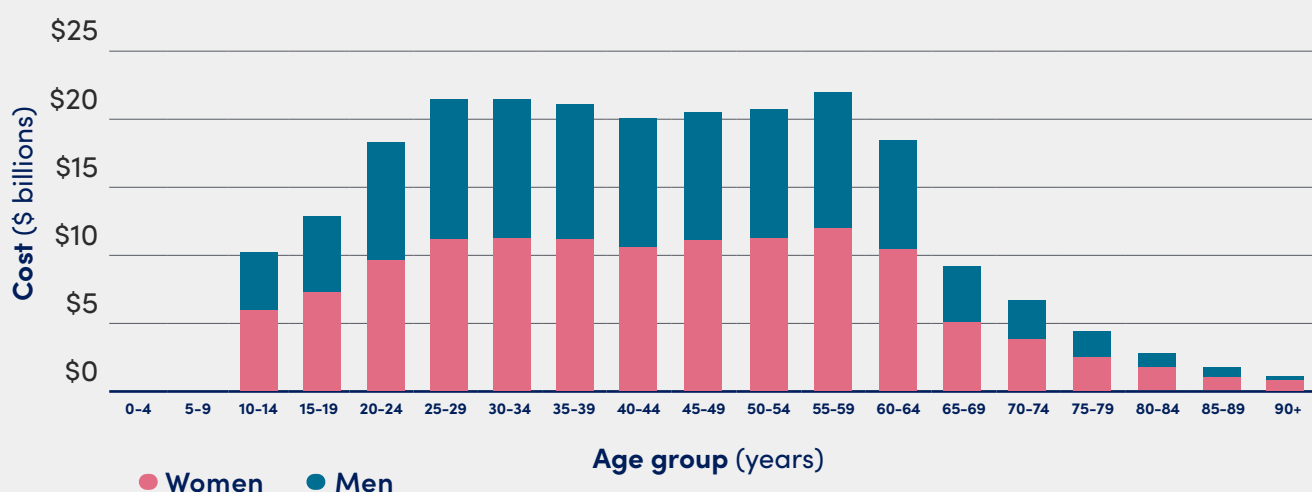
Source: Deloitte Access Economics

xxi Second order impacts were not costed in this report.

BOX 5.1: SKIN BLEACHING AND HAIR STRAIGHTENING

HAIR STRAIGHTENING

Black women spend more time and money styling and straightening their hair than women of any other racial or ethnic group. They spend in the order of three times as much by some estimates,[172] and nine times as much on beauty and grooming products than the average for women across all racial or ethnic groups.[173]

While it is unclear how much of the styling is due to appearance-based discrimination compared to other factors such as styling preferences, the Dove hair study shows that Black women are 80% more likely to alter their hair to meet social or work expectations than non-Black women.[174]

SKIN BLEACHING

In 2020, the US market for skin lighteners was estimated at $2.3 billion.[175] Many women of color seek chemical products to lighten their complexion, however women of all skin shades may use skin lighteners to fade age spots.

This is significant, considering the range of negative impacts associated with cosmetic bleaching, such as hyperpigmentation, carcinoma, and bacterial, fungal and viral skin infections.[176] Skin bleaching products sometimes include ingredients that are not approved for use in humans, and some are banned for use, such as mercury. Skin creams and soaps containing mercury, hydroquinone and steroids are associated with an additional set of health problems such as mercury poisoning and kidney damage.[177] Uses of these products is a major source of mercury exposure for Caribbean-born Blacks and Dominicans in New York City.[178]

Health conditions resulting from exposure to chemical skin-lighteners can present significant costs for the individual and society. They incur well-being losses, cost time and money, and can impact overall mental and physical health. While these costs can be significant, they have not been incorporated into this study because they are second order impacts associated with skin bleaching, rather than from body dissatisfaction or appearance-based discrimi-

nation directly. Further, while the financial costs are considerable for some groups, this has also been excluded from the total costs as they are an income transfer and do not represent a net cost to society.

It is important to consider the intersections between those who acquire skin bleaching services and segments of the society. Outside of the United States, skin bleaching is common in sub-Saharan Africa, the Middle East, Asia, and Latin America. A quarter of the adult female population in Bamako (Mali) and 67% of the adult female population in Dakar (Senegal) are estimated to be using skin lightening products.[179] Within the United States, a large portion of the immigrant communities is found to be using skin-lightening compounds for cosmetic purposes, even though these are made for medical use.[180] Skin bleaching in these communities is likely a response to widespread skin shade discrimination.[181]

Mercury-containing skin bleaching products are a public health crisis according to the World Health Organization,[182] given the vast health implications of these products. Recognizing the role of body dissatisfaction and skin shade discrimination in propagating bleaching is crucial to addressing this public health concern.

5.2.2 Labor market outcomes

Labor market discrimination on the basis of appearance cost the society $181.6 billion in 2019. This was in the form of lower wages, lower employment, and their associated efficiency losses. Weight discrimination cost the society $123.1 billion and skin shade discrimination cost $58.5 billion (see Table 5.7).

Table 5.7: **Costs of labor market outcomes attributable to weight and skin shade discrimination in 2019** ($ millions)

	PRODUCTIVITY LOSSES	EFFICIENCY LOSSES	TOTAL	COST PER PERSON ($)
Skin shade discrimination	56,436	2,067	**58,503**	891
Weight discrimination	118,977	4,106	**123,082**	1,874
Total	**175,412**	**6,173**	**181,585**	**2,765**
Cost per person ($)	2,671	94	2,765	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

Wage losses made up 58% of this cost and are partly due to Black people with darker skin shades (as opposed to lighter) and individuals of a higher weight holding lower paying jobs because of appearance-based discrimination. It is also due to these individuals receiving less compensation for otherwise equal work in the same roles compared to those who are not discriminated against.

Employment losses made up 42%, reflecting the lower rate of employment faced by individuals who might have faced discriminatory hiring due to their appearance.

While the exact mechanisms driving these gaps are unclear, controls for common determinants of wages and employment such as race or ethnic group, the level of education, experience, gender, and age indicate the differentials are likely driven by appearance-based discrimination.

5.2.2.2 Productivity losses

The productivity losses associated with weight and skin shade discrimination in the labor market cost the society $175.4 billion in 2019, which included reduced employment costs of $73.2 billion and wage gaps leading to an economic loss of $102.2 billion (see Table 5.8).

Table 5.8: **Annual productivity losses due to poorer employment outcomes in 2019** ($ millions)

PRODUCTIVITY LOSSES	WAGE LOSS SOCIETAL IMPACT	REDUCED EMPLOYMENT	TOTAL	COST PER PERSON ($)
Skin shade discrimination	28,505	27,931	**56,436**	859
Weight discrimination	73,703	45,273	**118,977**	1,811
Total	**102,208**	**73,204**	**175,412**	2,671
Cost per person ($)	1,556	1,115	2,671	

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

These costs are substantial, but they do not capture the full extent of the difference in outcomes individuals facing appearance-based discrimination. For example, hair discrimination might also affect labor market outcomes, with Black women with natural hairstyles being viewed as less professional, less competent, and less likely to be recommended for an interview than Black women with straight hairstyles.[183] This can influence the likelihood of someone with natural hair getting a job, especially in markets where interview referrals play a major role. Approximately 2% of interviews will result in a job offer,[184] so there could be a considerable social and economic cost of hair discrimination as there are currently 0.9 million Black women (aged 20 years and over) who are in the labor force but who are unemployed.[185] However, it is not possible to estimate the cost of this accurately, as more research is needed to document patterns and consequences of wearing natural versus straightened hair styles in employment and other settings.

5.2.2.3 Efficiency losses

The efficiency losses associated with labor market outcomes make up 45% of the total efficiency losses across the three outcome categories. The estimated annual reduction in economic efficiency due to the labor market outcomes of weight discrimination was $4.1 billion, while for skin shade discrimination it was $2.1 billion.

These are composed of lower wages and lower employment resulting in losses in taxation revenue for the government of $6.2 billion which would not occur in the absence of appearance-based discrimination (Table 5.9). Efficiency losses associated with labor market outcomes do not include government expenditures.

Table 5.9: **Annual reduction in economic efficiency due to labor market outcomes of appearance-based discrimination in 2019** ($ millions)

OUTCOMES	REDUCED TAXATION	TOTAL
Wage gap	2,807	**2,807**
Employment gap	3,367	**3,367**
Total	**6,173**	**6,173**
Cost per person ($)	94	94

Source: Deloitte Access Economics analysis. Note: Components may not sum to totals due to rounding.

5.2.3 Other life outcomes

Individuals also experience worse outcomes in other areas of their life due to appearance-based discrimination. Two additional areas where these impacts occur are in the justice system and within educational settings. This study quantified the costs associated with discrimination in the justice system attributable to skin shade discrimination.

In the justice system, discriminatory incarceration on the basis of skin shade discrimination was modelled for members of the Black community, as there is not enough research for other groups.

Discriminatory incarceration on the basis of skin shade cost society $2.7 billion in 2019, which includes additional expenditure on prisons ($1.4 billion), forgone earnings due to incarceration ($1 billion) and a loss of economic efficiency from government expenditure and forgone taxation revenue ($211 million).

While the cost of incarceration is relatively small compared to the other outcome categories, incarceration can impose large future costs for an individual in the form of worse mental health,[186] housing instability[187] and long-term employment instability,[188] among others, which are not captured in this analysis. Incarcerated members of the Black community are more likely to face unemployment once released from prison, than the non-Black community on average.

The expenditure on prisons includes expenditure on correctional services to cover the average cost of incarceration for federal inmates,[190] and is similar to the other estimates that cover expenses such as personnel, utilities and health care.[191] Educational outcomes are harder to cost due to them largely presenting in the future. Nonetheless, these outcomes have major impacts on people who face discrimination (see Box 5.2).

BOX 5.2: THE IMPACT OF SKIN SHADE AND HAIR DISCRIMINATION ON SCHOOL SUSPENSIONS

Appearance-based discrimination may lead to poorer educational outcomes, which can pose future costs for an individual through income instability or poor health.

School suspensions are more likely for those who have darker skin shades than for those with lighter skin shades within the same racial/ethnic group. School suspensions are also more common for Black people who wear their hair naturally than for those who wear it chemically straightened, because dress codes treat natural hairstyles as de facto violations.[192] Hannon et al (2013)[193] found that for every unit increase in the darkness of one's skin shade on a 10-point scale, the likelihood of suspension increased by 12.7%. The study used a sample of 1,797 African American students aged between 12-16 years. The increased likelihood of suspension was robust to the inclusion of controls such as socioeconomic status, academic performance, and adolescent behavior.

The impacts could be substantial; each suspension has been shown to increase a student's odds of dropping out of school by 13%, which is associated with a future social and fiscal (economic impact on local, state, and federal tax-payers) loss of $82,900 per student over a lifetime, in 2019 dollars.[194] The punitive measures against schoolchildren has contributed to the 'School-to-Prison Pipeline,' referring to children being forced out of schools due to a collective of punishment policies and into the juvenile and criminal justice system.[195]

According to the National Center for Education Statistics, there are approximately 2.3 million Black Americans enrolled in public secondary schools in the US (increasing to 2.5 million when accounting for private school enrolments).[196] We estimate that 34% fewer suspensions would occur if all African Americans were suspended at the same rate as those with the lightest skin shade. If skin shade discrimination were eliminated, there would be an estimated 379,000 fewer suspensions of Black schoolchildren each year, which would lead to an estimated 49,000 more Black school-children graduating from high school each year in the US. The future costs (e.g., lost income and employment) associated with additional school suspensions and subsequent school leaving each year are estimated to be approximately $4.09 billion each year.

5.2.4 Sensitivity analysis

One-way sensitivity analysis was conducted on prevalence, the VSLY, PAFs (and therefore the underlying risk of developing a condition), and estimated unit costs (health system and productivity costs), along with the direct effects of appearance-based discrimination (i.e. the impact on wage and employment outcomes).

Input values have been varied by a consistent amount across model inputs to show how sensitive the results are to particular inputs.

The results of the sensitivity analysis showed that varying the PAFs had the largest impact on the results, with total costs – financial and

non-financial – ranging between $338.4 billion and $652.8 billion (see Appendix Table B.2).

The costs considered here are almost certainly an underestimate; for example, costs of skin shade discrimination have not been considered for other races or ethnic groups beyond the Black community, due to the lack of research conducted for other communities. Similarly, it is possible that weight discrimination may occur for people of a high weight who do not feel comfortable reporting it in surveys intended to capture total prevalence.

To test the effects of broader weight discrimination on the results, the employment and wage effect of weight discrimination was applied to all people of a higher weight (with a BMI of 25kg/m2 or higher), rather than only for those groups where statistically significant results were observed (see Appendix Table A.18). For this scenario, an employment gap of 1.5% and a wage gap of 2.5% was used, where these values represent the average of the negative results reported in Han et al (2008).[197] Under this scenario, the costs of labor market discrimination due to an individual's appearance would

icrease from $181.6 billion to $217.9 billion (including weight and skin shade discrimination). These costs capture wage losses, employment losses, and efficiency losses corresponding to lost wage and employment.

Similarly, while there are no population wide estimates of the effect of skin shade discrimination, estimates do exist for immigrants to the US. Hersch (2008)[198] used data from the New Immigrant Survey to show that each 1-unit increase in the darkness of skin shade on a scale from 0 to 10 reduces average hourly earnings by 1.7% for immigrants, controlling for education, English language proficiency, occupation in source country, family background, race, ethnicity, and country of birth. When the mean skin shade rating for Latin Americans, Asians and Black people is compared to white (Chart 5.6), it is possible to estimate that the wage gap for these groups due to skin shade discrimination is in the order of 4.5%.[xxii] Of course, this assumes that the skin shade of new immigrants to the US matches the broader population, which is unknown. Despite this, under this scenario, the costs of labor market discrimination due to an individual's skin shade would increase from $181.6 billion to $240.2 billion. Another study focusing on Latino immigrants showed that those with darker skin shades earned $2,500 less per year on average, than those with lighter skin shades.[199] Studies focusing immigrants are not captured in main estimates due to the complexity of the US immigration system. For example, the skin shade of an applicant applying for a H-1B work visa might be correlated with their socioeconomic status in their home country, which in turn might be correlated with the underlying race/ skin shade distribution in that country.

xxii Racial/ethnic sub-groups among immigrant study participants were rated on a skin shade scale of 1 (lightest) to 10 (darkest). The mean skin shade for Latin Americans, Asian, Black and white was 4.3, 4.1, 7.0 and 2.5, respectively. Each of these groups was compared to white to obtain the wage gap due to skin shade discrimination, and the resulting figures were then weighted by their respective number of workers in the general population.

Chart 5.6: **Skin shade scale of new immigrants to the US**

● Latin American ● Asian ● Black ● White
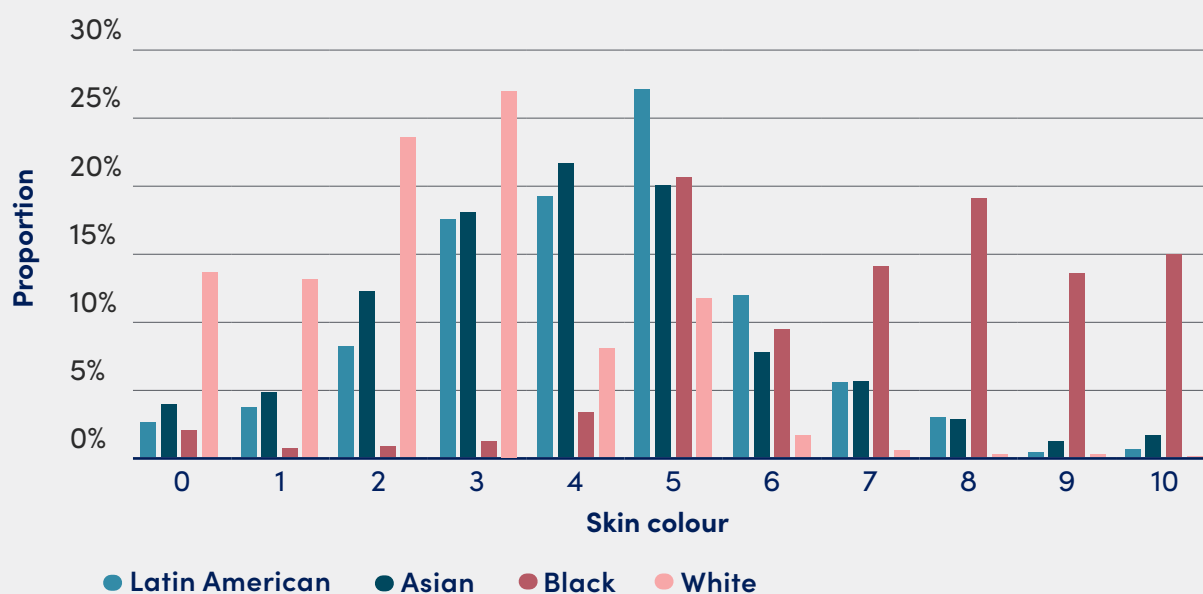
Source: Adapted from Hersch et al (2008).[200]

As with body dissatisfaction, a final scenario excluding efficiency losses was considered (see Section 4.2.4) under this scenario the total social and economic cost of skin shade discrimination would be $487.4 billion.

Case study: **Lived experiences of weight discrimination**

Trish is a 27-year-old African American woman living in Maryland. Trish believes that beauty ideals are something that appeals to the masses and helps to sell products. In the United States, she describes this as, "lighter skin tones, thinner figures, tall frames, ... being flawless, no flaws, without imperfections." Trish believes that people who fit typical beauty ideals are given opportunities in industries such as entertainment, advertising, and modelling, while those who don't are excluded. Trish, who describes herself as being 'heavy', has experienced this herself while modelling for a store.

Trish and her friend were visiting a store owned by someone Trish knew on a day the store was photographing models for advertisements. While waiting for the models, she was asked if she wanted to jump in and model. But when she did, Trish noticed that most clothes were cut small to fit women with a smaller size and shape. When she did put on something to model, she was asked to angle herself in ways that would hide her stomach. Trish was strongly opposed to this, wanting to role model bodies that many people have but feel ashamed of due to the unrealistic standards set by certain industries.

Trish also recounts she has been treated differently in lounges and clubs to other women around her who sport the "perfect curls" and "hourglass body" she sees on Instagram.

"If you're not one of those girls, then you can expect to be treated a lot differently. And even when it comes to paying for things, like they'll make exceptions for them. And for you, it's full price."

As a result of her experiences, Trish has skipped meals to restrict her calorie intake, sometimes eating only once a day or chewing gum from 8:00am to 8:00pm. These habits resulted in her struggling to get through the day. Trish also found comfort in going out with a mask during the COVID-19 pandemic, because she didn't have to spend long hours of the day on makeup to conform to societal standards.

"Well now, I don't put on makeup, I save so much time. I think it's more mental than anything, and I'll say this for the most part – I can navigate without feeling like I'm not worthy."

Overtime, Trish has sought therapy and focused on self-acceptance and self-worth to derive a better understanding of who she is, and how to best navigate triggering situations. Through this, she has been able to embrace her own beauty for herself.

Case study: **Lived experiences of weight discrimination**

Sophie shares Trish's belief about beauty standards being set by entertainment. **Sophie is a 26-year-old white woman** working as a nurse assistant in California.

Sophie felt stigma around her weight when she played softball for her high school team, with people assuming she couldn't run bases as quickly without assessing her abilities. But Sophie's weight has fluctuated over different stages of her life, and she has noticed being treated differently when she loses weight by the same set of people, including her ex-spouse:

"Before, I wouldn't even catch a glance or whatever. Now it was like I was somebody that he had never seen before."

When Sophie gains weight she feels stigma, even from people she did not know, including grocery shoppers who would judge the food items in her grocery cart. Feeling judged physically, rather than for the person she is, makes Sophie feel depressed, anxious about pursuing new relationships, seek reassurance during existing relationships, and look at herself as being less beautiful than others. The acceptance and support Sophie receives from her family regardless of her weight has kept her going through her experiences of weight discrimination.

6 Discussion.

It will take a range of initiatives, underpinned by robust research and supported by multi-sector partnerships, to help drive broader social change.

RESEARCHERS   EMPLOYERS   INDIVIDUALS   FAMILY AND FRIENDS

Tackling harmful beauty ideals

GOVERNMENT   EDUCATION AND HEALTH CARE PROVIDERS   INDUSTRY AND MEDIA

6 Discussion

Key findings

- The findings in this report indicate there is a **need to address harmful beauty ideals** in the US to help reduce attributable economic and social costs.

- The combined financial and well-being costs of severe body dissatisfaction in the US was estimated to be $305 billion in 2019, while for appearance-based discrimination it was $501 billion. This includes $71 billion associated with the cost of skin shade discrimination, and $430 billion for weight discrimination.

- Tackling harmful beauty ideals will likely require a range of interventions, supported by multi-sector partnerships, and underpinned by evidence, **to help drive broader social change**. Potential interventions include promoting safer digital spaces, encouraging diversity in advertising, regulating the sale of harmful products, tax incentives and laws to end appearance-based discrimination, education at schools to promote body confidence, mental health support services, and social media literacy.

- Importantly, there are several areas where **further research is required** to deepen our understanding of harmful beauty ideals. Targeting these research gaps will help to ensure interventionsimplemented are effective and remain fit-for-purpose over time.

Harmful beauty ideals impact at least 45 million people in the US through severe body dissatisfaction every year and 66 million through experiences of appearance-based discrimination.

Yet, despite how pervasive the issue is, the collective impacts of harmful beauty ideals (and associated costs) are generally not well understood. This report attempts to fill this gap by estimating the economic and social costs of harmful beauty ideals in 2019 for malesand females aged 10 years and older in the US.

Modelling for this report found that the financial costs of body dissatisfaction in 2019 were $84 billion, while the associated well-being costs were $221. These costs are

bigger still for appearance-based discrimination, with the financial costs totaling $269 billion in 2019 or close to 1.3% of US GDP. In addition, the loss of well-being from appearance-based discrimination was estimated to be $233 billion.

Collectively, the combined financial and well-being costs was $305 billion for body dissatisfaction and $501 billion for appearance-based discrimination. For both body dissatisfaction and appearance-based discrimination, women bore most of the impact and costs (58% or $177 billion and 63% or $317 billion respectively).

COST OF APPEARANCE-BASED DISCRIMINATION
IN 2019

$269 billion
financial costs

$233 billion
non- financial costs

COST OF BODY DISSATISFACTION
IN 2019

$84 billion
financial costs

$221 billion
non- financial costs

▶ **Beyond the immediate economic benefits, eliminating harmful beauty ideals could also greatly improve societal well-being more broadly.**

This report highlights that the impacts of body dissatisfaction and appearance-based discrimination are far reaching – from poorer mental health, to worse employment and education outcomes, and even premature mortality.

The costs of harmful beauty ideals affect everyone. While the majority of costs related to body dissatisfaction and appearance-based discrimination were borne by individuals impacted by them, a large proportion of the costs – up to 54% of the total financial costs for body dissatisfaction and 33% for appearance-based discrimination – are borne by every tax payer. This includes family and friends, employers, private health insurers, government, and the rest of society.

Despite what is now known about the impacts of body dissatisfaction and appearance-based discrimination, there are several areas where future research is required to improve our understanding of the total costs associated with harmful beauty ideals (see Box 6.1).

BOX 6.1: BUILDING THE EVIDENCE-BASE AROUND HARMFUL BEAUTY IDEALS

- Further research is needed around specific forms of appearance-based discrimination that were not quantified (e.g., hair discrimination) or which were not included in this report (e.g., height discrimination, discrimination against people with visible disabilities, etc.), to better understand their impacts and costs. Furthermore, it would be valuable to gain a better understanding of the intersectionality between different forms of appearance-based discrimination, for example, experiencing both skin shade and hair discrimination.

- The majority of research in the US of skin shade discrimination is focused on the Black community. More research is needed to understand the prevalence and impacts of skin shade discrimination for other communities of color, for whom this form of discrimination is also likely to be relevant.

- There are also many different definitions of body dissatisfaction in the literature, and different ways it is measured. Adopting a consistent definition and measure of body dissatisfaction would help enable comparisons to be made across studies and improve the quality of research.

- Certain impacts in this report were discussed qualitatively and as such their costs are not well understood. For body dissatisfaction this includes certain behavioral disorders, low self-esteem, risky sexual behavior, worse educational outcomes and professional engagement, alongside the use of risky cosmetic products and procedures. For appearance-based discrimination, this includes employment and health outcomes associated with discrimination.

- More research is needed to inform estimates of the financial and non-financial costs of body dissatisfaction and appearance-based discrimination experienced by transgender and gender nonbinary communities in the US. Body dissatisfaction and weight, skin shade, and hair discrimination affect transgender and gender nonbinary communities, but how these experiences are patterned by age, sex assigned at birth, and other important factors is not yet known. In addition, discrimination targeting transgender and gender nonbinary communities for their gender expression is widespread and likely to profoundly affect employment and other economic indicators, but more research is needed to help inform costing analyzes like those presented in this report for cisgender women and men.

- Some of the studies used in this report were based on non-US samples and, as a result, lack generalizability to the US population. For example, the odds ratio adopted for anxiety is based on an Irish sample. To obtain more precise estimates, more US-specific research is needed. Further, for some of the impacts that were costed, the estimates could be improved. For example, the odds ratio for eating disorders for men was based on disordered eating behaviors as opposed to clinically diagnosed eating disorders.

- For outcomes related to skin shade and hair discrimination, controls for race were carefully considered to understand how appearance-based discrimination differs for people of the same race, but with different skin shades and hair types. However, more work is needed to enable researchers to further disentangle the effects of appearance-based discrimination from other forms of racial and gender discrimination and identify the incremental costs.

Deepening our understanding of harmful beauty ideals, by focusing on key gaps identified in this report, will be key to helping to tackle harmful beauty ideals moving forward. **But what else can be done to address the underlying forces that promote and propagate harmful beauty ideals?**

The media is an important channel through which harmful beauty ideals are created and consumed by the general public. By removing harmful advertisements and promoting diversity, the media can help to break down narrow beauty ideals. For example, in 2021, Pinterest became the first major media platform to ban all advertisements with weight loss language and imagery, including those that glamorize or diminish particular body types.[201]

Research has shown that the media can be used as a tool to help – not hinder – people's attitudes towards their own appearance and the appearance of others. For example, exposure to self compassion quotes on social media has been shown to help improve young women's body dissatisfaction.[202] Other research has shown that promoting positive and non-stereotypical portrayals of people of a higher weight in the media can reduce weight stigma, weight discrimination and their associated negative health outcomes.[203,204,205,206]

Educating people about the unrealistic nature of images shown in the media can also help to prevent people from internalizing harmful beauty ideals. For example, McLean et al (2016) find that media literacy – that is, the ability to think critically about media – is a protective factor against body dissatisfaction after viewing thin-ideal media images.[207]

Businesses also play an important role in how they market their products to consumers, with some research exploring tax cuts and other business incentives as a way to prevent digitally altered and highly unrealistic advertising.[208] Furthermore, raising awareness around the role of certain consumer products, such as skin bleaching, in perpetuating harmful beauty ideals could also help to disincentivize businesses from producing and marketing these products.[209] Workplaces could also tackle appearance-based discrimination through implementing unconscious bias training alongside inclusivity programs.

Similarly, unconscious bias training could be used to educate those working in the criminal justice system on how appearance-based discrimination leads to unfair outcomes for marginalized groups. While some law enforcement officers, judges and prosecutors have been exposed to unconscious bias training, it has mostly focused on racial bias overall and is yet to explore specifically skin shade or other appearance-based forms of bias.[210]

Helping to raise awareness around appearance-based discrimination among health care, education and other government service providers could help to reduce its prevalence in particular settings. For example, the quality of healthcare provided could be improved through ethics training among medical and nursing students to reduce weight or skin shade discrimination.[211] This could also enable health care providers to have important conversations with their patients around the attributable health risks. Stigma in design systems also needs to be tackled to facilitate inclusiveness of all bodies. This might include expanding seat sizes and door frames and updating medical equipment

to suit people with large bodies.[212] It could also include correcting bias in some medical technologies (such as medical oximeters which measure people's oxygen saturation levels), which have been shown to be more effective on lighter skin shades compared to darker skin shades.[213]

Many researchers have also called for stronger legislation targeting appearance-based discrimination.[214] For example, the Creating a Respectful and Open World for Natural Hair (CROWN) Act prohibits schools and workplaces from discriminating against people based on their natural hair styles and has been passed in twelve states in the US as of July 2021.[215] Further, only one state and six cities in the country have enacted legislation that prohibits discrimination on the basis of weight.[216]

Importantly, indicators for both body dissatisfaction and appearance-based discrimination need to be developed and monitored over time in national data collections. For example, evi-

dence suggests the impacts of body dissatisfaction and appearance-based discrimination may have increased during the COVID-19 pandemic. A recent study published by Sutin et al. (2021) found that compared to pre-COVID-19 times, weight discrimination during the pandemic was associated with a two-fold increased risk of depression.[217] Further, the stress induced by COVID-19 lockdowns has been linked to worsening body image and maladaptive eating practices.[218,219]

This is only a snapshot of potential interventions for what is a very broad and pervasive issue. In reality, it will take a range of initiatives, underpinned by robust research and supported by multi-sector partnerships, to help drive broader social change (see Figure 6.1).

Figure 6.1: **Tackling harmful beauty ideals**

RESEARCHERS

- Broaden the **evidence base** around the impacts of harmful beauty ideals.
- Focus on **key limitations** identified in this report.
- Continue to evaluate evidence-based **interventions** to improve body satisfaction.

EMPLOYERS

- Review workplace **grooming policies** to limit appearance-based discrimination.
- Implement **unconscious bias training** to help address appearance bias, alongside comprehensive **inclusivity programs.**
- Introduce a **zero tolerance policy** for appearance-based discrimination.

INDIVIDUALS

- Follow social media accounts that promote **positive and diverse beauty**.
- **Seek help** if you feel you are experiencing body dissatisfaction or appearance-based discrimination.
- **Respect, accept and appreciate** your body for everything it can do and how it looks.
- Get involved in **civic advocacy** to enact antidiscrimination legislation and company policies.

FAMILY AND FRIENDS

- Promote positive body image through healthy conversations about appearance.
- Avoid criticising others about the way they look.

Tackling harmful beauty ideals

GOVERNMENT

- Implement interventions that are underpinned by a **strong evidence base**.
- **Evaluate interventions** over time to ensure they remain fit-for-purpose.
- **Improve data collection** around the prevalence and impacts of body dissatisfaction and appearance-based discrimination.
- **Expand anti-discrimination statute** to prohibit discrimination based on weight, height, skin shade, and natural hairstyle.

EDUCATION AND HEALTH CARE PROVIDERS

- **Improve training** for health practitioners and teachers to mitigate bias in service delivery.
- Implement checks for equipment, seating, clothing, etc. to ensure it is **inclusive of all body sizes**.
- Ensure medical devices are effective for all skin shades; ensure training in dermatology covers all skin shades.
- Teach evidenced-based **body image lessons** in schools and have explicit **anti-bullying policies** that address appearance-based discrimination.

INDUSTRY AND MEDIA

- Stop digital distortion and **promote appearance diversity** in advertising.
- Ensure there are a **variety of creators** behind the camera.
- **Educate minors**, especially with social media literacy, to create safer digital spaces.
- Develop products which meet hygiene and personal care needs and **do not reinforce harmful beauty ideals**.
- Advance social media policies to create safer digital spaces.

Appendices.

Appendix A :
Costing methodology

Overview of literature review

This analysis was informed by a broad literature review, which helped inform the various inputs required to understand the impacts of harmful beauty ideals and estimate the associated costs.

Searches were conducted across a range of different data-bases, such as Google Scholar and PubMed, JSTOR and EconLit. Key search phrases included an interaction between the terms relating to body dissatisfaction, appearance, discrimination, and the possible outcomes associated with these. Examples of key words include:

- **Body (dis)satisfaction, body image, self-esteem**

- **Attractiveness, beauty, beauty ideals, appearance**

- **Skin shade, skin color, colorism, skin tone**

- **Weight discrimination, weight bias, weight stigma, perceived discrimination**

- **Natural hair, hair discrimination**

- **Cost, impact, association, outcome, risk,odds, effect**

- **Depression, anxiety, weight control, suicide, suicidal thought, suicide attempt, eating disorders, obesity, drug, alcohol, dieting, tanning, smoking, substance abuse, mortality, quality of life, skin bleaching, injury, cardiovascular, metabolic, diabetes, hypertension**

- **Wage, earnings, income, employment, education, attainment, crime, incarceration, arrests, healthcare, caregiving, care**

- **Economic, social.**

Snowballing techniques were also used to expand on these terms and identify other relevant sources. These were also combined with searches of specific data sources, such as publications from the BLS for general inputs to the model and report.

Evidence was assessed using the guiding principles of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.220 Key factors considered in the evaluation of evidence include:

- **the risk of bias**
- **the precision of effect estimates**
- **the consistency of individual study results**
- **how directly the evidence answers the question of interest**
- **the risk of reporting bias.**

An important consideration is whether a causal relationship was evident in the literature, between the impact being studied and the pathways of appearance-based discrimination and body dissatisfaction. Further, studies were reviewed to determine whether they controlled for a range of confounding factors, such as race, gender, age, and other variables. This was done to reduce the chance of bias impacting on the estimated PAFs in the costing study.

Importantly, not all impacts associated with body dissatisfaction and appearance-based discrimination were costed. Impacts were excluded if they risked double counting, if there was inadequate cost data, or if the available empirical evidence was of low quality.

General modelling approach

As discussed in Chapter 2, our intent was to cost the economic and social costs of harmful beauty ideals. This was done by looking at the attributable costs of the outcomes associated with body dissatisfaction and harmful beauty ideals. Body dissatisfaction was associated with poorer health outcomes in the form of a range of health impacts. Appearance-based discrimination was associated with poorer labor market, health, and other life outcomes such as incarceration. The health outcomes of appearance-based discrimination presented in the form of health impacts as in body dissatisfaction, but also in the form of healthcare avoidance and poorer quality of care.

Outcomes for appearance-based discrimination varied by type of discrimination and were not quantified for all population sub-groups due to insufficient empirical evidence.

Not all health impacts were costed in the study. For example, impacts were discussed qualitatively if they risked double counting (e.g., suicides and depression), if there was inadequate cost data, or if empirical evidence was sparse.

Furthermore, this analysis does not consider possible future costs that may be attributed to each health impact itself - for example, lung cancer costs attributable to the increased rate of smoking, or liver disease due to risky drinking, among others. In part, this represents a more conservative approach, but there is also some uncertainty about the longer-term outcomes of body dissatisfaction and appearance-based discrimination (i.e. studies have not linked body dissatisfaction, for example, to an increased risk of lung cancer).

A summary of the outcomes and groups affected is provided in Table A.1, and this is further disaggregated by outcome and health impact from either body dissatisfaction or appearance-based discrimination in Table A.2.

Table A.1: **Outcomes of body dissatisfaction and appearance-based discrimination, and groups affected**

PATHWAY	FORM	OUTCOMES	GROUPS AFFECTED
Body dissatisfaction	N/A	• Poor health outcomes • (depression, anxiety, eating disorders, smoking, suicide attempts, alcohol and drug abuse)	• People aged 10 years and above, experiencing body dissatisfaction
Appearance-based discrimination	Weight discrimination	• Poor health outcomes (depression, anxiety, drug abuse, smoking, obesity)	• People aged 10 years or above, experiencing weight discrimination
		• Wage losses from labor market discrimination	• White working females with a BMI of 25kg/m2 or higher • Black working females with a BMI of 30kg/m2 or higher
		• Employment losses from labor market discrimination	• White working females with a BMI of 30kg/m2 or higher • White working males with a BMI between 25–30kg/m2 • Hispanic working females with a BMI of 25kg/m2 or higher
	Skin shade discrimination	• Poor health outcomes (depression, hypertension)	• Black males and females aged 10 years or above, of a 'very dark' skin shade*
		• Wage losses	• Black working females and males of a 'dark' or 'very dark' skin shade*
		• Employment losses	• Black working females and males of a 'dark' or 'very dark' skin shade*
		• Discriminatory incarceration (prison costs, wage losses)	• Black males and females aged 10 years or above, of the darkest tercile**

Source: Deloitte Access Economics.
*as categorized by Monk, E.P (2015)
**as derived from Kreisman and Rangel (2015) .

Table A.2: **Cost types included by impact for body dissatisfaction and appearance-based discrimination**

IMPACT	COST TYPE					
	Medical	**Pharma**	**Absentee-ism**	**Presentee-ism**	**Wage and employ-ment**	**Informal care**
Depression	✓	✓	✓	✓	✓	✓
Eating disorders	✓	✓	✓	✓	✓	✓
Alcohol and drug abuse	✓	✓	✓			
Suicide attempts	✓	✓	✓	✓	✓	✓
Smoking			✓	✓		
Anxiety	✓	✓	✓	✓	✓	✓
Obesity	✓	✓	✓	✓	✓	
Hypertension	✓	✓	✓	✓		
Direct effect of skin shade discrimination					✓	
Impacts of skin shade discrimination	✓	✓	✓	✓	✓	✓
Direct effect of weight discrimination					✓	
Impacts of weight discrimination	✓	✓	✓	✓	✓	✓

Source: Deloitte Access Economics analysis

Table A.2 (continued): **Cost types included by impact for body dissatisfaction and appearance-based discrimination**

IMPACT	COST TYPE			
	Premature mortality	Efficiency and other	YLDs	YLLs
Depression	✓	✓	✓	✓
Eating disorders	✓	✓	✓	✓
Alcohol and drug abuse	✓	✓	✓	✓
Suicide attempts	✓		✓	✓
Smoking	✓	✓		
Anxiety	✓	✓	✓	✓
Obesity		✓	✓	✓
Hypertension		✓		
Direct effect of skin shade discrimination		✓		
Impacts of skin shade discrimination	✓	✓	✓	✓
Direct effect of weight discrimination		✓		
Impacts of weight discrimination	✓	✓	✓	✓

Source: Deloitte Access Economics analysis

IMPACT	NOTES (IF APPLICABLE)
Depression	
Eating disorders	
Alcohol and drug abuse	Absenteeism costs relate to time spent away from work due to hospitalizations directly attributable to drugs and/or alcohol. In contrast, presenteeism, reduced employment and informal care costs are not applicable as alcohol and illicit drug use has not been costed as an ongoing condition. Similarly, YLDs have not been estimated but deaths that are directly attributable to drugs and alcohol (e.g., overdoses) have been included.
Suicide attempts	This impact specifically focuses on suicide attempts and by definition excludes all attempts that result in death. As such, YLLs and loss of lifetime earnings associated with suicides are not included.[xxiii]
Smoking	Smoking is a risk factor for other health conditions and illnesses (such as lung cancer) but does not directly incur health costs. Similar to illicit drugs and alcohol, there are no ongoing costs associated with reduced employment, informal care, and loss of well-being. Presenteeism costs relate to lost productivity from increased smoking breaks.
Anxiety	
Obesity	Obesity is a risk factor for other health conditions which can result in premature mortality; however, these are not captured as they are beyond the direct cost of obesity included in this study. Similarly, informal care is associated with comorbidities for which obesity is a risk factor, rather than obesity itself. The wage and employment effects of obesity are those hat result from weight discrimination in the labor market.
Hypertension	The costs associated with hypertension are those that result from a clinical diagnosis of hypertension. Costs in this study include the direct treatment costs (e.g., hypertensive medications) for the condition. The conditions for which hypertension is a risk factor, such as stroke and heart failure are not accounted for.
Direct effect of skin shade discrimination	Includes incarceration costs as well as the difference in wages and employment.
Impacts of skin shade discrimination	Includes health impacts associated with skin shade discrimination.
Direct effect of weight discrimination	Includes differences in wages and employment due to perceived weight discrimination.
Impacts of weight discrimination	Includes health impacts associated with weight discrimination.

Source: Deloitte Access Economics analysis
xxiii Costs associated with suicides are instead captured through the depression and anxiety pathways.

There are several general economic parameters and assumptions that inform the modelling for this report. These include the discount rate, inflation data, employment and earnings and others (see Table A.3).

Table A.3: **Overall cost parameters**

PARAMETER	VALUE	SOURCE
Base year	2019	n/a
Discount rate	3%	Murray (1994)[223]
Population of interest	Females and males aged 10 years and older. Varies by group.	US Census data[224]
CPI inflation	1.8%	Bureau of Labor Statistics (BLS)[225]
Health inflation (personal health care price index)	1.4%	Centers for Medicare and Medicaid Services[226]
Average weekly earnings	Varies by group.	BLS[227]
Fringe wages	1.46	BLS[228]
Employment rates	Varies by group.	BLS[229]

Source: As noted.

Prevalence of body dissatisfaction

The prevalence of body dissatisfaction, broken down by five-year age groups and gender, is shown in Table A.4.

Table A.4: **Prevalence of body dissatisfaction, % of population**

AGE GROUP (IN YEARS)	FEMALE	MALE
10–24	19.2%	12.2%
25–34	13.2%	9.4%
35–44	19.8%	13.8%
45–54	24.8%	13.4%
55–64	24.6%	13.0%
65+	14.6%	9.9%

Source: Deloitte Access Economics based on Fallon et al (2014).

Estimates of the prevalence of body dissatisfaction have been drawn from Fallon et al (2014), representing the results from the Body Areas Satisfaction Subscale (BASS) of the Multidimensional Body–Self Relations Questionnaire (MBSRQ). Body dissatisfaction was constructed as a binary variable based on average BASS scores. If someone received a score of 2.75 or lower, they were classified as having body dissatisfaction, as per Frederick et al (2009).

Estimates were adjusted by age based on the breakdown in Fallon et al (2014). Age adjustments were based on the average deviations across age groups, comparing a cut-off score of 2.75 and 3. The resulting age adjustments are shown in Table A.5. For ages 10–19, no adjustment has been made (as Fallon et al considered only adults in their study).

Table A.5: **Age adjustments for the prevalence of body dissatisfaction**

AGE GROUP (IN YEARS)	FEMALE	MALE
10–19	1.00	1.00
20–24	0.63	1.30
25–34	0.69	0.77
35–44	1.03	1.13
45–54	1.29	1.10
55–64	1.28	1.06
65+	0.76	0.81

Source: Deloitte Access Economics based on Fallon et al (2014).

Prevalence of appearance-based discrimination

The overall prevalence of appearance-based discrimination, broken down by five-year age groups and gender, is shown in Table A.6. These estimates were derived by aggregating the number of people in the population experiencing weight discrimination (based on prevalence estimates in Table A.7), skin shade discrimination (based on prevalence estimates in Table A.8) and hair discrimination.

Table A.6: **Prevalence of appearance-based discrimination, % of population**

AGE GROUP (IN YEARS)	FEMALE	MALE
10–14	25.9%	22.0%
15–19	25.7%	21.9%
20–24	26.0%	22.1%
25–29	26.7%	22.5%
30–34	25.6%	21.4%
35–39	25.1%	20.8%
40–44	26.8%	22.8%
45–49	26.5%	22.6%
50–54	26.1%	22.4%
55–59	25.5%	22.0%
60–64	22.5%	18.3%
65–69	21.6%	17.5%
70–74	20.5%	16.6%
70–74	20.0%	16.1%
80–84	19.8%	15.9%
85–89	22.6%	15.8%
90+	14.3%	14.4%

Source: Deloitte Access Economics based on Spalholz et al (2016)[230], Robinson et al (2017)[231], CDC.[232], Monk (2015)[233], Kreisman and Rangel (2015)[234].

A limitation of this approach is the potential cross-over between those who experience skin shade discrimination, and those who experience hair discrimination. This limitation might overstate the overall prevalence of appearance-based discrimination, but has no consequence for cost estimation, as the cost of hair discrimination has been estimated separately from the total.

The prevalence rate for weight discrimination varied by outcome stream. Labor market differentials were faced by the working age population according to their BMI category. The proportion of people in each weight category was derived from CDC[235] and applied to the working age population as relevant. Health differentials were evidenced for people who perceived weight discrimination. The prevalence of perceived weight discrimination by age and gender is shown in Table A.7. There was no evidence of weight discrimination impacting incarceration.

Table A.7: Prevalence of weight discrimination, % of population

AGE GROUP (IN YEARS)	FEMALE	MALE
10–39	11.4%	11.5%
40–59	13.1%	13.7%
60+	10.7%	10.5%

Source: Spalholz et al (2016)[236]

As in the case for weight discrimination, the prevalence rate for skin shade discrimination varied by outcome stream (labor market outcomes, health outcomes and other life outcomes). Labor market differentials were evidenced for the Black working population with medium and dark skin shades. Health outcome differentials were evidenced for the proportion of Black people with the darkest skin shade on average. Other life outcomes capturing incarceration was evidenced for Black people with the darkest skin shades. These estimates are presented in Table A.8.

Table A.8: Prevalence of skin shade discrimination, % of population

OUTCOME	FEMALE	MALE	SOURCE
Labor market outcomes	69.9%[i]	69.9%[i]	Kreisman and Rangel (2015)[237]
Health outcomes	18.0%[ii]	18.0%[ii]	Monk, E. P (2015)[238]
Other life outcomes	33.6%	33.6%	Kreisman and Rangel (2015)[239]

Source: Calculated as approximate terciles of medium skin shade (rates 0 to 7) and dark skin shade (rated 8 to 10) [ii] skin shade 'very dark' and 'dark'.

The prevalence of hair discrimination is estimated to be 25% of women identifying as being of African descent between 18-71 years of age, per Johnson et al (2014).[240] The population group captured in the study was Black women. No age breakdown was provided.

Prevalence of impacts associated with body dissatisfaction and appearance-based discrimination

Costs were attributed to body dissatisfaction and the health and incarceration outcomes of appearance-based discrimination using population attributable fractions (PAFs).

The PAFs used in this analysis were calculated using the following formula:

$$PAF = \frac{P(RR - 1)}{P(RR - 1) + 1}$$

Where: P represents the prevalence of body dissatisfaction or appearance-based discrimination, and RR represents the relative risk of impact. As noted, the PAFs are derived based on the prevalence of body dissatisfaction or appearance-based discrimination together with the RR (or OR where this is not available). The RR was drawn from a range of sources in the literature, as summarized in Table A.9. Where possible, inputs have been used that are specific to men and women. Where this is not available, the same input has been used for both sexes.

Table A.9: **Prevalence and odds ratios/relative risks of impacts associated with body dissatisfaction and appearance-based discrimination**

PATHWAY	IMPACT	PREVA-LENCE OF IMPACT (Crude rate, % of population aged 10+)	ODDS RATIO/ HAZARD RATIO/ RELATIVE RISK		SOURCE AND NOTES
			FEMALE	MALE	
Body dissatisfaction	Depression	1.0%	1.84	2.85	**OR:** Bornioli et al (2021)[241] Based on severe episodes. **Prevalence:** Hasin et al (2018)[242]; Global Burden of Disease (GBD) (2019)[243]
Body dissatisfaction	Eating disorders	1.9%	2.20	1.87	**HR: F:** Bornioli et al (2019)[244] Average across bulimia nervosa, binge eating disorder, and purging disorder. **M:** Neumark-Sztainer (2006)[245] **Prevalence:** Deloitte Access Economics (2020)[246]
Body dissatisfaction	Alcohol and drug abuse	7.4%	1.46	2.13	**OR: F:** Bornioli et al (2019)[247] Average across high-drinking and illicit drug use. **M:** Field et al (2014)[248] **Prevalence:** SAMSHA (2019)[249]
Body dissatisfaction	Suicide attempts	0.6%	2.23	1.81	**OR:** Crow et al (2008)[250] **Prevalence:** SAMSHA (2019)[251]
Body dissatisfaction	Smoking	12.7%	1.56	1.41	**OR:** Bornioli et al (2019).[252] **Prevalence:** Centers for Disease Control and Prevention (2020)[253]
Body dissatisfaction	Anxiety	6.1%	1.87	1.87	**OR:** Dooley et al (2015)[254] Based on moderate and severe anxiety. **Prevalence:** Kessler et al (2012);[255] GBD (2019)[256]
Weight discrimination	Depression	1.0%	1.50	1.50	**OR:** Robinson, Sutin and Daly (2017)[257] **Prevalence:** Hasin et al (2018)[258]; Global Burden of Disease (GBD) (2019)[259]
Weight discrimination	Anxiety	6.1%	2.92	2.92	**OR:** Hatzenbuehler et al (2009)[260] **Prevalence:** Kessler et al (2012);[261] GBD (2019)[262]
Weight discrimination	Smoking	12.7%	1.64	1.64	**OR:** Sutin and Terracciano (2017)[263] **Prevalence:** Centers for Disease Control and Prevention (2020)[264]
Weight discrimination	Becoming obese	50.6% [i]	1.72	1.72	**OR:** Sutin and Terracciano (2013)[265] **Prevalence:** See note i
Weight discrimination	Remaining obese	49.4% [ii]	1.69	1.69	**OR:** Sutin and Terracciano (2013)[266] **Prevalence:** See note ii
Weight discrimination	Drug abuse	7.4%	2.01	2.01	**OR:** Sutin and Terracciano (2017)[267] **Prevalence:** SAMSHA (2019)[268]
Skin shade discrimination	Depression	1.0%	1.54	1.54	**OR:** Monk, E. P (2015)[269] **Prevalence:** Hasin et al (2018)[270]; Global Burden of Disease (GBD) (2019)[271]
Skin shade discrimination	Hypertension	5.5%	1.94	1.94	**OR:** Monk, E. P (2015)[272] **Prevalence:** CDC (2020)[273]

Source: As noted. i.% of population that is underweight or 'normal' weight (BMI < 30 kg/m2).
ii.% of population that is obese (BMI equal to

i. % of population with BMI < 30 kg/m2.
ii. % of population with a BMI equal or greater 30 kg/m2.

The PAFs are summarized in Table A.10

Table A.10: **Summary of Population Attributable Fractions (PAFs)**

PATHWAY	IMPACT	PAF	
		Female	Male
Body dissatisfaction	Depression	13%	17%
Body dissatisfaction	Eating disorders	18%	9%
Body dissatisfaction	Alcohol and drug abuse	2%	3%
Body dissatisfaction	Suicide attempts	13%	12%
Body dissatisfaction	Smoking	8%	4%
Body dissatisfaction	Anxiety	22%	15%
Weight discrimination	Depression	5%	5%
Weight discrimination	Anxiety	19%	21%
Weight discrimination	Smoking	5%	3%
Weight discrimination	Becoming obese	1%	0.4%
Weight discrimination	Remaining obese	2%	2%
Weight discrimination	Drug abuse	7%	4%
Skin shade discrimination	Depression	1%	1%
Skin shade discrimination	Hypertension	1%	1%
Skin shade discrimination	Incarceration	4%	6%

Source: Deloitte Access Economics analysis.

Labor market outcomes of appearance-based discrimination were estimated through a first principles approach, where the wage andemployment gap resulting from appearance-based discrimination was applied to the prevalence of appearance-based discrimination in the working population. The approach for labor market outcomes is described further under the productivity costs section.

Health costs

The health unit cost inputs for body dissatisfaction and appearance-based discrimination are reported in Table A.11 and Table A.12 respectively.

Where unit health costs were not provided in 2019 dollars, they have been inflated using a rate of 1% per annum, based on the personal health care price index.[274] Adjusted unit costs have then been multiplied by the prevalence of the condition in 2019, to yield the total health cost by condition.

Table A.11: **Health unit costs and data sources for body dissatisfaction**

IMPACT	MEDICAL SERVICES	PHARMACEUTICALS	SOURCE AND NOTES
Depression	$1,754	$921	Greenberg et al (2021)[275]
Suicide attempts	$2,834	$1,488	Shephard et al (2016)[276]
Eating disorders	$813	$18	Deloitte Access Economics (2020)[277]
Anxiety	$1,288	$609	Shirneshan et al (2012)[278]
Smoking*	n/a	n/a	n/a
Drugs & alcohol	$23,256*	$3,781*	Quantified Ventures (2017)[279]

Source: As noted.
Note: Health costs for drugs and alcohol reflect the cost per hospitalization and emergency department visit, as opposed to a per person cost.
*Not all costs are estimated for each impact, see Table A.2.

Table A.12: **Health unit costs and data sources for appearance-based discrimination**

IMPACT	MEDICAL SERVICES	PHARMACEUTICALS	SOURCE AND NOTES
Depression	$1,754	$921	Greenberg et al (2021)[280]
Anxiety	$1,288	$609	Shirneshan et al (2012)[281]
Smoking	n/a*	n/a*	n/a*
Obesity	$1,782	$838	Cawley et al (2021)[282]
Drug abuse	$23,256	$3,781	Quantified Ventures (2017)[283]
Hypertension	$519	$260	Heart Disease and Stroke Statistics (2019)[284]

Source: As noted. *Not all costs are estimated for each impact, see Table A.2.

Productivity costs

Productivity costs comprise a range of different cost types, including presenteeism costs, absenteeism costs, reduced employment participation, informal care costs, and loss of lifetime earnings from premature mortality.

Presenteeism and absenteeism

For presenteeism and absenteeism costs, unit costs have been taken directly from existing cost of illness studies where available and adjusted for changes in prevalence and inflation.

A wage inflation parameter of 2.5% was used to inflate values to 2019 dollars.[285]

Where productivity costs do not already incorporate employee benefits, this has been added in based on the ratio of wages and salaries to total employee compensation from the BLS.[286]

A summary of presenteeism and absenteeism unit costs and their sources for body dissatisfaction and appearance-based discrimination are shown in the Tables below.

Table A.13: **Productivity unit costs and data sources for body dissatisfaction**

IMPACT	MEDICAL SERVICES	PHARMACEUTICALS	SOURCE AND NOTES
Depression	$1,642	$4,146	Greenberg et al (2021)[287]
Suicide attempts	$2,389	$8,056	Shephard et al (2016)[288]
Eating disorders	$1,166	$3,324	Deloitte Access Economics (2020)[289]
Anxiety	$727	$673	Marciniak et al (2004)[290]
Smoking*	$645	$4,414	Berman et al (2013)[291]
Drugs & alcohol	$432	n/a	Quantified Ventures (2017)[292]

Source: As noted. *Not all costs are estimated for each impact, see Table A.2.

Table A.14: **Productivity unit costs and data sources for appearance-based discrimination**

IMPACT	MEDICAL SERVICES	PHARMACEUTICALS	SOURCE AND NOTES
Depression	$1,642	$4,146	Greenberg et al (2021)[293]
Anxiety	$727	$673	Marciniak et al (2004)[294]
Smoking	$645	$4,414	Berman et al (2013)[295]
Obesity	F: $112 M: $178	F: $331 M: $347	Finkelstein et al (2010)[296]
Drug abuse	$432	n/a	Quantified Ventures (2017)[297]
Hypertension	$28	$453	Heart Disease and Stroke Statistics (2019)[298]

Source: As noted. *Not all costs are estimated for each impact, see Table A.2.

Reduced participation in the labor market

To calculate reduced employment participation, estimates of the reduction in employment associated with an attributable condition or illness have been drawn from the literature. This reduction in employment have been multiplied by US general population employment rates and average weekly earnings by age and gender. Earnings were adjusted to incorporate employment benefits as previously described.

For body dissatisfaction, the relative reduction in employment associated with attributable conditions and illnesses is shown in Table A.15.

For appearance-based discrimination, the employment gap was derived based on the lower likelihood of employment for each of skin shade and weight discrimination when comparing:

• An individual who has darker skin shades (medium or dark skin shades) compared to one with lighter skin shades, controlling for race effects

• An individual who perceives weight discrimination compared to one who does not.

In addition to a direct effect on employment between groups, appearance-based discrimination also leads to worse health outcomes which in turn may reduce the likelihood of being employed. (see Table A.17). In a similar way, additional incarcerations due to skin shade discrimination also impose a reduction in employment compared to a situation where the discrimination does not exist.

The efficiency losses associated with the employment gap were derived under the assumption that the people facing hiring discrimination remain unemployed for duration of the year. This means the employment gap represents a complete loss of output for society. That is, in the absence of appearance-based discrimination, these individuals would otherwise be employed at the same rate as in the general population, and earning the same wage.

Table A.15: **Reduction in employment (%) and data sources for body dissatisfaction**

IMPACT	EMPLOYMENT (%)	SOURCE
Depression	17%	Luciano & Meara (2014)[299], based on moderate mental illness
Suicide attempts	4%	Various sources; based on the proportion of people who are severely incapacitated or sustain a long-term disability following a suicide attempt [300,301,302]
Eating disorders	12%	Deloitte Access Economics (2020)[303]
Anxiety	17%	Luciano & Meara (2014)[304], based on moderate mental illness
Smoking*	n/a	n/a
Drugs & alcohol	n/a	n/a

Source: As noted. *Not all costs are estimated for each impact, see Table A.2.

Table A.16: **Reduction in employment (%) and data sources for employment outcomes associated with appearance-based discrimination**

IMPACT GROUP	EMPLOYMENT GAP (%)	SOURCE
Weight discrimination		
White, female, obese	1.5%	Han et al (2008)[305]
Hispanic, female, obese	4.5%	Han et al (2008)
Black, women, obese	Insignificant	Han et al (2008)
White, female, overweight	Insignificant	Han et al (2008)
Hispanic, female, overweight	2.4%	Han et al (2008)
Black, female, overweight	Insignificant	Han et al (2008)
White, male, obese	Insignificant	Han et al (2008)
Hispanic, male, obese	Insignificant	Han et al (2008)
Black, male, obese	Insignificant	Han et al (2008)
White, male, overweight	0.6%	Han et al (2008)
Hispanic, male, overweight	Insignificant	Han et al (2008)
Black, male, overweight	Insignificant	Han et al (2008)
Skin shade discrimination		
Black, female	15.0%	Hersch, J. (2006)[306]
Black, male	15.0%	Hersch, J. (2006)

Source: As noted. Employment rates for each group for weight discrimination are relative to the 'normal' weight category. Employment rates for skin shade discrimination for each impact group are relative to lighter skin shades in the same race or ethnic group.

Table A.17: **Reduction in employment (%) and data sources for health outcomes associated with appearance-based discrimination**

IMPACT	EMPLOYMENT (%)	SOURCE
Depression	17%	Luciano & Meara (2014)[307], based on moderate mental illness
Anxiety	17%	Luciano & Meara (2014)[308], based on moderate mental illness
Smoking	n/a	n/a
Obesity	n/a	n/a
Drug abuse	n/a	n/a
Hypertension	n/a	n/a

Source: As noted.

Social and economic costs from the appearance-based discrimination wage gap

Economic loss from labor market outcomes for appearance-based discrimination were estimated by determining the average loss in income due to the discrimination. These were obtained for skin shade discrimination and weight discrimination.

To derive the wage gap associated with skin shade discrimination, a skin shade distribution was derived for the Black working population based on literature.[309,310] The average wage penalty for the relevant skin shade was then multiplied by the relevant portion of the working population that fits this distribution, and aggregated to derive the total wage gap due to skin shade discrimination. Similarly, the work-

ing population were categorized into different weight segments using estimates from CDC.[311] The wage penalty for various weight segments of men and women were then applied to the relevant segments and aggregated to derive the total wage gap due to weight discrimination. The wage penalties for both, skin shade and weight discrimination were those that persisted after holding constant the common determinants of income, such as education, experience and talent. A wage gap due to weight discrimination was only found for the proportion of the population considered obese in Han et al (2008).[312] The effects for the overweight or underweight population wasinconclusive.

Table A.18: **Wage gap (% reduction) and data sources for labor market outcomes associated with appearance-based discrimination**

IMPACT GROUP	EMPLOYMENT (%)	SOURCE
Weight discrimination		
White, female, obese	7.5%	Han et al (2008)[313]
White, male, obese	Insignificant	Han et al (2008)
Black, female, obese	4.9%	Han et al (2008)
Black, male, obese	Wage gain	Han et al (2008)
Skin shade discrimination		
Black, female	6.3%	Kreisman and Rangel (2015)[314]
Black, male	6.3%	Kreisman and Rangel (2015)

Source: As noted. The wage gap for weight discrimination is relative to the 'normal' weight category.
The wage gap for skin shade discrimination is relative to lighter skin shades in the same race or ethnic group.

A key modelling assumption was then made in the analysis: The wage gap represents an inefficient use of labor resources, and societal output would be higher in the absence of appearance-based discrimination. However, only part of the gap would be closed. For example, someone with dark skin may be overlooked for a promotion and therefore may face lower wages than they otherwise would have if they were suitable for the position. However, the employer will most likely have filled the position they were hiring for, even if they may not have chosen the most suitable applicant.

As a result, it is necessary to consider the economic costs of an inefficient allocation of labor which is leading to the wage gap. To do this, literature on the declining labor market discriminatory barriers faced by women and Black men was considered. Between 1960 and 2010, Hsieh et al (2018)[315] found that reduced discrimination and improved allocation of talent meant that GDP in 2010 was 43.5% higher than it otherwise would have been in the absence of reducing discrimination. Further, Hsieh et al (2018) estimated that GDP would be a further 9.9% higher if the discriminatory barriers were completely removed in 2010. Further analysis of the results of Hsieh et al (2018) indicatesthat close to 20% of the possible gain in GDP could be realized if wage gaps did not persist in 2010.[xxiv]

When this is compared to the size of the wage gaps that existed in 2010 for women and Black men,[316] societal output can be estimated to be

higher by an amount approximately equal to two-thirds (63%) of the wage gap. This assumption was applied to the wage gap estimate derived in this study.[xxiv]

Informal caregiving

To estimate the costs of informal care for people in the US experiencing body dissatisfaction and appearance-based discrimination, it was necessary to estimate the proportion of people receiving support from a caregiver for each attributable condition and the number of hours of care provided.

Informal care costs were calculated using an opportunity cost approach. The opportunity cost of an hour of care was estimated using general population average weekly earnings and employment rates from the BLS. Earnings were adjusted to incorporate employment benefits, using the ratio of wages and salaries to total employee compensation. The opportunity cost of a caregiver's time was estimated to be $22.48 per hour.

The health outcomes associated with body dissatisfaction and appearance-based discrimination were not treated as risk factors for other conditions; thus, informal caregiving was not incorporatedfor associated conditions such as lung cancer for smoking or cardiovascular conditions for hypertension.

xxiv The remaining gain in GDP would occur due to declining barriers in the labor market, including increased labor force participation, improved allocation of talent and human capital accumulation.

Table A.19: **Informal care hours and data sources for body dissatisfaction**

IMPACT	HOURS OF CARE	PROPORTION OF PEOPLE WITH CONDITION RE- QUIRING CARE	SOURCE AND NOTES
Depression	8.1 hours	100%	Based on the incremental difference be- tween care hours provided for people with a mental illness,[317] compared to the aver- age hours spent by a primary caregiver.
Suicide attempts	23.7 hours	4%	Reflects the hours provided by a primary caregiver.[319] This is multiplied by the pro- portion of people who are severely inca- pacitated or sustain a long-term disability following a suicide attempt.[320,321,322]
Eating disorders	4.45 hours	100%	Deloitte Access Economics (2020)[323]
Anxiety	8.1 hours	100%	Based on the incremental difference be- tween care hours provided for people with a mental illness,[324] compared to the aver- age hours spent by a primary caregiver.[325]
Smoking*	n/a	n/a	n/a
Alcohol and drug abuse*	n/a	n/a	n/a

Source: As noted. *Not all costs are estimated for each impact, see Table A.2.

Table A.20: **Informal care hours and data sources for appearance-based discrimination**

IMPACT	HOURS OF CARE	PROPORTION OF PEOPLE WITH CONDITION RE- QUIRING CARE	SOURCE AND NOTES
Depression	8.1 hours	100%	Based on the incremental difference between care hours provided for people with a mental illness,[326] com- pared to the average hours spent by a primary caregiver.[327]
Anxiety	8.1 hours	100%	Based on the incremental difference between care hours provided for peo- ple with a mental illness,[328] compared to the average hours spent by a primary caregiver.[329]
Smoking	n/a	n/a	n/a
Obesity	n/a	n/a	n/a
Drug abuse	n/a	n/a	n/a

Source: As noted.

Loss of lifetime earnings

To estimate premature mortality, the discounted future value of lifetime earnings is multiplied by deaths associated with attributable conditions and illnesses of body dissatisfaction and appearance-based discrimination. Lifetime earnings are discounted at a rate of 3%,[330] and incorporate employment rates and average lifetime earnings based on the agegender distribution of deaths. The crude rate of deaths associated with attributable conditions of body dissatisfaction and appearance-based discrimination is provided below.

Table A.21: **Mortality rates for health conditions associated with harmful beauty ideals, and data sources**

PATHWAY	IMPACT	MORALITY RATE BY IMPACT (crude rate, ages 10+)	SOURCE AND NOTES
Body dissatisfaction	Depression	0.80%	Based on prevalence of suicides from CDC Wonder (2020).[331] Attribute 50% of suicides to depression.[332]
Body dissatisfaction	Eating disorders	0.19%	Deloitte Access Economics (2020)[333]
Body dissatisfaction	Alcohol and drug abuse	1.55%*	CDC Wonder (2020)[334]
Body dissatisfaction	Suicide attempts	n/a	n/a
Body dissatisfaction	Smoking	n/a	n/a
Body dissatisfaction	Anxiety	0.03%	Based on prevalence of suicides from CDC Wonder (2020).[335] Attributes 10% of suicides to anxiety.[336]
Weight/skin shade discrimination	Depression	0.80%	Based on prevalence of suicides from CDC Wonder (2020).[337] Attributes 50% of suicides to depression.[338]
Weight discrimination	Anxiety	0.03%	Based on prevalence of suicides from CDC Wonder (2020).[339] Attribute 10% of suicides to anxiety.[340]
Weight discrimination	Smoking	n/a	n/a
Weight discrimination	Becoming obese	n/a	n/a
Weight discrimination	Remaining obese	n/a	n/a
Weight discrimination	Drug abuse	1.55%*	CDC Wonder (2020)[341]
Skin shade discrimination	Hypertension	n/a	n/a

Source: As noted. *Mortality rate of drugs and alcohol is given as a proportion of the number of hospitalizations and emergency departments visits attributable to drugs and alcohol in 2019.
Not all costs are estimated for each impact, see Table A.2.

Other costs

Incarceration

Incarceration costs included annual prison expenditure, wage losses for someone who spends one year in prison and the efficiency losses associated with this loss.

Annual prison expenditure per person was derived from the Federal register[342] for 2017 ($36,299) and inflated to 2019 ($37,969) using the inflation rate derived from CPI growth. This was applied to the total estimated number of people in prison in 2019 due to skin shade discrimination, to arrive at the annual prison expenditure attributable to appearance-based discrimination. No significant relationship was found between weight discrimination and incarceration.

Wage loss per male or female inmate was estimated as being the full-time annual wage for Black males or females respectively, by age group. This was applied to the total estimated number of people in prison in 2019 due to skin shade discrimination, to arrive at the total income loss attributable to appearance-based discrimination.

Efficiency losses due to incarceration were for lost income taxes from lost wages and losses associated with government expenditure on prisons. These were estimated similarly to efficiency losses associated with labor market-wage discrimination, and government expenditure on health services, as explained in the following sections.

A summary of these inputs is provided in Table A.22.

Table A.22: **Inputs to estimate the costs of incarceration due to appearance-based discrimination**

INPUT	VALUE	SOURCE AND NOTES
Average odds of being incarcerated due to skin shade discrimination	2.27	Monk, E.P. (2015)[343]
Average cost of incarceration	$37,969	Federal Register[344]
Total lost earnings while incarcerated	$1,527 million	BLS[345]

Source: As noted.

Efficiency losses

As noted in Chapter 2, a reduction in economic efficiency has been included as a cost in this study. The reduction in efficiency occurs when taxation is levied to fund services. Economic theory suggests overall output is reduced compared to a
counterfactual scenario where taxation does not need to be levied to fund services.

When applied to the costs of body dissatisfaction and appearance-based discrimination, governments levy taxes to fund the provision of services, such as additional healthcare, beyond what would be required in the absence of the condition.

Similarly, governments also collect reduced taxation revenue through lower employment and overall output, which is offset by a higher marginal tax rate than would be required in the absence of costs imposed by body dissatisfaction and appearance-based discrimination.

The higher marginal tax rates lead to reduced economic efficiency as they induce a suboptimal allocation of resources within the economy. For example, an individual may choose to reduce the amount of labor they supply for additional leisure time, which leads to a reduction in
overall output. The reduction in output is larger than the size of the tax itself, thereby creating a net additional cost.

There are a range of approaches discussed in the literature, with some scholars including efficiency losses in societal cost of illness and others arguing that these costs should be excluded.

Including efficiency losses in this report is in line with best practice recommendations made by a number of studies, including Frick et al. (2010) who argue that it is important for efficiency losses associated with taxes and transfers be included in societal cost-of-illness studies.[346] Further, Sindelar (1991, p.39) claims that "ignoring the [efficiency loss] underestimates the associated costs and the potential benefits of prevention and treatment" associated with illnesses.[347] Additionally, the inclusion of efficiency losses is in line with the approach used by other published cost-of-illness studies,[348] although it is noted that not all cost-of-illness studies include these costs.

Lost taxation revenue

To estimate the efficiency loss due to lost taxation revenue (given an assumption of no change in spending), revenue was assumed to be maintained by taxing individuals more.

Reduced earnings from lower employment participation and lower output result in reduced taxation revenue collected by the government. As well as forgone income taxation, there would also be a fall in indirect (consumption) taxes, as those with lower incomes spend less on the consumption of goods and services. Lost taxation revenue was estimated by multiplying an average personal income tax rate and average indirect taxation rate to lost earnings.

The average rates of taxation for personal income tax, indirect taxes and company taxes were derived based on Internal Revenue Service tax statistics data. The respective tax rates used in the calculation of efficiency losses were:

- 23.8% average personal income tax rate, and 7.1% average indirect tax rate;[349] and
- 25.7% average company tax rate.[350]

These tax rates were then multiplied by the total productivity impacts (including informal care costs) and by the burden of taxation to derive efficiency losses.

Government expenditure

For this study, it was assumed that government health expenditure associated with conditions and illnesses attributable to appearance-based discrimination and body dissatisfaction is funded by taxing individuals more than they otherwise would be in the absence of harmful beauty ideals.

Based on data from the Centers of Medicare and Medicaid Services, the federal government pays for 29% of total health expenditure on average, while state and local governments fund 16.10%.[351]

This was multiplied by total health expenditure and by the burden of taxation to derive efficiency losses.

The burden of taxation

Based upon an average taken across multiple academic studies conducted in the US, income tax was estimated to impose a burden of $0.33 for every dollar of tax levied.[xxv]

The rate of efficiency loss was derived as the simple average of the following studies:

- Blomquist & Simula (2010) adjusted for the non-linearity of US tax system to calculate excess burden based on 2006 US data. They found a $0.44 loss for every dollar of tax revenue. This included state and federal income taxes, payroll tax and sales taxes.[352]
- Fullterton and Ta (2017) suggested that the marginal excess burden of income tax in the US is $0.21.[353]
- Saez et al (2012) estimated that the marginal excess burden per dollar of federal income tax revenue levied is $0.195 under a scenario where all income tax is proportionally increased.[354]
- Baicker and Skinner (2011) examined the impact of continued growth in the Medicare and Medicaid programs, finding that the cost of generating the revenue needed to finance the additional health spending is $1.48 per dollar of revenue collected, implying the efficiency loss is $0.48 per dollar of revenue collected.[355]

xxv Other work in the US has indicated the excess burden of levying taxation is highly variable and dependent on a range of assumptions about the structure of the tax system, and how the additional taxation is levied. For the purposes of this analysis, we have focused on more conservative estimates of the efficiency loss associated with levying additional taxation. For example, studies by Feldstein in 1999 and 2006 estimated that the efficiency loss is $0.76 per dollar of revenue raised, or greater.

Feldstein, M. (2006). The effect of taxes on efficiency and growth (No. w12201). National Bureau of Economic Research.

Loss of well-being

The burden of disease methodology was developed by the World Health Organization and is a comprehensive measure of mortality and disability from conditions for populations around the world. The burden of disease methodology is a non financial approach, where life and health can be measured in terms of disability adjusted life years (DALYs). DALYs include both years of life lost due to premature death (YLLs) and years of healthy life lost due to disability (YLDs).

The burden of disease methodology was used to capture the non-financial costs of body dissatisfaction and appearance-based discrimination. This includes the reduced quality of life due to the impacts of body dissatisfaction/appearance-based discrimination, and the loss of life from premature mortality.

The reduction in quality of life is estimated via disability weights, which are assigned to various health states. A disability weight of zero represents a year of perfect health and one represents death. Other health states are given a weight between zero and one to reflect the loss of well-being due to a particular condition. For example, a disability weight of 0.2 is interpreted as a 20% loss in well-being, relative to perfect health for the duration of the condition.

A summary of the disability weights by condition, used to estimate the YLDs in this study, is provided in the Table A.23.

Table A.23: **Disability weights by condition for body dissatisfaction and appearance-based discrimination**

PATHWAY	IMPACT	DISABILITY WEIGHT	SOURCE AND NOTES
Body dissatisfaction	Depression	0.658	GBD (2020),[356] based on severe depression.
Body dissatisfaction	Eating disorders	0.163	Deloitte Access Economics (2020),[357] reflecting the weighted average across various types of eating disorders.
Body dissatisfaction	Alcohol and drug abuse*	n/a	n/a
Body dissatisfaction	Suicide attempts	0.460	Spijker et al (2011)[358]
Body dissatisfaction	Smoking*	n/a	n/a
Body dissatisfaction	Anxiety	0.133	GBD (2020),[359] based on moderate anxiety.
Weight discrimination	Depression	0.658	GBD (2020),[360] based on severe depression.
Weight discrimination	Anxiety	0.133	GBD (2020),[361] based on moderate anxiety^.
Weight discrimination	Smoking*	n/a	n/a
Weight discrimination	Obesity	0.047#	Jia and Lubetkin (2005)[362]
Weight discrimination	Drug abuse*	n/a	n/a
Skin shade discrimination	Depression	0.658	GBD (2020),[363] based on severe depression.

Source: As noted. #Utility change, impact of obesity on well-being.
*Not all costs are estimated for each impact, see Table A.2. ^Moderate anxiety is used as a proxy for the weighted average across all severity levels, for all anxiety estimates.

A summary of the YLDs and YLLs by condition are provided in the main body of this report (see Table 5.6 and Table 4.5).

These DALYs are then multiplied by the value of a statistical life year (VSLY) to calculate the dollar value of the lost well-being. The VSL is anestimate of the value society places on an anonymous life. The US Government collectively does not set a specified VSL dollar amount for use in policy and economic evaluations, with heterogeneity across government departments and agencies.

For this report a VSL of $307,167 was used. This was calculated based on the mid-point of the Office of Management and Budget recommendation in 2003 (a VSL of $5.5 million) and inflated to 2019 dollars using CPI inflation.

A discount rate of 3% was used for future burden of disease costs consistent with other costs within this report. No discounting was applied to future DALY estimates (when presented in terms of DALYs) consistent with the current GBD study methods.[364] Discounting of the VSLY reflects its lower future financial value due to positive time preference, risk and inflation.

To estimate the loss of well-being due to premature mortality (the YLLs) from body dissatisfaction and appearance-based discrimination, YLLs were estimated based on the age of death, the excess risk of mortality due to the condition, and the corresponding difference between average life expectancy at the age of death minus the age at death, where life expectancy was based on the Standard Life Expectancy Table.[365] A summary of mortality rates by condition is provided in Table A.21.

Costs by discrimination type

Within the appearance-based discrimination pathway, this study estimated costs for skin shade and natural hair discrimination, across health, labor market and other life outcomes.

For costs associated with health outcomes, the main body of this report provides a high-level breakdown of costs by discrimination type. However, this Appendix provides a more detailed breakdown of costs by type of discrimination and health impact.

For **labor market outcomes**, a breakdown of costs by impact and type of discrimination are already provided in the main body of this report (see Section 5.2.2). For other life outcomes, all costs estimated relate to skin shade discrimination only, and as such a more detailed breakdown of costs is not required.

Health outcomes by discrimination type and health impact

Health system costs
The total health system costs were $21.9 billion. Of this, the total health system costs attributable to skin shade discrimination was $0.21 billion (from depression and hypertension) and that attributable to weight discrimination was $21.7 billion (from depression, anxiety, obesity and drug abuse).

Table A.24: **Annual health system costs attributable to skin shade and weight discrimination ($ millions)**

HEALTH IMPACT	MEDICAL COSTS	PHARMACEU-TICAL COSTS	TOTAL	COST PER PERSON($)
Weight discrimination				
Anxiety	3,119	1,474	4,593	70
Depression	264	70	167	5
Obesity	6,491	3,052	9,542	145
Drug abuse	6,380	859	7,239	110
Subtotal	**16,254**	**5,454**	**21,708**	**331**
Cost per person ($)	247	83	**331**	
Skin shade discrimination				
Depression	73	38	**111**	2
Hypertension	66	33	**99**	2
Subtotal	**139**	**71**	**210**	**3**
Cost per person ($)	2	1	**3**	

Source: Deloitte Access Economics analysis.

*Not all costs are estimated for each impact, see Table A.2. Components may not sum due

Productivity costs

The productivity losses associated with health conditions developed were $55 billion. Of this, productivity losses associated with weight dis–crimination totaled $53.7 billion, while for skin shade discrimination they were $1.3 billion.

Table A.25: **Annual productivity losses due to skin shade and weight discrimination in 2019** ($ millions)

HEALTH IMPACT	REDUCED EMPLOY-MENT	ABSEN-TEEISM	PRESEN-TEEISM	PREMA-TURE MORTAL-ITY	INFOR-MAL CARE-GIVING	TOTAL	COST PER PERSON ($)
Weight discrimination							
Anxiety	17,755	1,760	1,630	960	14,328		555
Depression	1,036	267	675	1,207	1,156	**4,340**	66
Smoking	–	804	5,501	–	–	**6,304**	96
Obesity	–	478	1,141	–	–	**1,618**	25
Drug abuse	–	52	–	5,038	–	**5,090**	77
Subtotal	**18,790**	**3,361**	**8,946**	**7,204**	**15,483**		**819**
Cost per person ($)	286	51	136	110	236	819	
Skin shade discrimination							
Depression	258	85	288	301	296	**1,129**	19
Hypertension	–	4	58	–	–	**61**	1
Subtotal	**258**	**89**	**346**	**301**	**296**	**1,290**	**20**
Cost per person ($)	4	1	5	5	5	20	

Source: Deloitte Access Economics analysis.
*Not all costs are estimated for each impact, see Table A.2. Components may not sum due to rounding.

Efficiency losses

The total efficiency loss associated with appearance-based discrimination was $7.5 billion, of which $7.3 billion were due to the health impacts associated with weight discrimination and $126 million were due to the health impacts associated with skin shade discrimination.

Table A.26: **Annual efficiency losses due to skin shade and weight discrimination in 2019** ($ millions)

	TAXATION (INDIVIDUAL AND CAREGIVER)	GOVERNMENT EXPENDITURE	TOTAL	COST PER PERSON ($)
Weight discrimination				
Anxiety	2,967	684	**3,651**	56
Depression	330	50	**380**	6
Smoking	367	–	**367**	6
Obesity	94	1,420	**9,542**	23
Drug abuse	355	1,077	**7,239**	22
Subtotal	**4,114**	**3,231**	**7,345**	**112**
Cost per person ($)	63	49	112	
Skin shade discrimination				
Depression	91	17	**111**	2
Hypertension	4	15	**99**	0.2
Subtotal	**95**	**31**	**210**	**1.9**
Cost per person ($)	1.4	0.5	1.9	

Source: Deloitte Access Economics analysis.
*Not all costs are estimated for each impact, see Table A.2. Components may not sum due to rounding.

Loss of well-being

The total loss of well-being associated with weight discrimination was $224.1 billion, reflecting lost well-being from depression ($32.9 billion), anxiety ($98.9 billion), obesity ($53.6 billion) and drug abuse ($38.6 billion). The total loss of well-being associated with skin shade discrimination was $8.4 billion, reflecting lost well-being from depression ($8.4 billion).

Table A.27: **Loss of well-being due to skin shade and weight discrimination in 2019** ($ millions)

CONDITION	DALYS ($M)	DALYS PER PERSON ($)	TOTAL	COST PER PERSON ($)
Weight discrimination				
Anxiety	98,920	1,506	**3,651**	56
Depression	32,998	502	**380**	6
Smoking	–	–	**367**	6
Obesity	53,623	816	**9,542**	23
Drug abuse	38,575	587	**7,239**	22
Subtotal	**224,116**	**3,412**	**7,345**	**112**
Cost per person ($)	3,412		112	
Skin shade discrimination				
Depression	8,417	128	**111**	2
Hypertension	–	–	**99**	0.2
Subtotal	**8,417**	**128**	**210**	**1.9**
Cost per person ($)	128		1.9	

Source: Deloitte Access Economics analysis.
*Not all costs are estimated for each impact, see Table A.2. Components may not sum due to rounding.

Appendix B : Sensitivity testing

This section will present the results of the sensitivity analysis, with changes in key inputs such as prevalence, impacts, unit costs, etc., across both pathways.

Table B.1: **Impact of one-way sensitivity analyzes on the cost of body dissatisfaction, 2019** ($ millions)

CASE	HEALTH SYSTEM	PRODUCTIVITY AND INFORMAL CARE	OTHER COSTS	LOSS OF WELL-BEING	TOTAL
Base case	**$9,060**	**$68,566**	**$6,464**	**$220,614**	**$304,704**
Prevalence					
Lower bound based on Fallon et al (2014)[366]	$6,665	$50,823	$4,783	$164,167	**$226,439**
Upper bound based on Fallon et al (2014)	$14,700	$116,653	$10,880	$364,257	**$506,490**
VSLY					
Lower (–20%)	$9,060	$68,566	$6,464	$176,491	**$260,581**
Upper (+20%)	$9,060	$68,566	$6,464	$264,737	**$348,826**
PAFs					
Lower (–20%)	$5,254	$40,329	$3,806	$139,955	**$189,344**
Upper (+20%)	$12,450	$93,876	$8,842	$292,284	**$407,451**
Unit costs (health and productivity)					
Lower (–20%)	$7,449	$58,351	$5,445	$220,614	**$291,859**
Upper (+20%)	$11,174	$78,782	$7,556	$220,614	**$318,126**
Effect of changing attributions					
No efficiency losses	$9,060	$68,566	$–	$220,614	**$298,240**
No cost of risky behaviors	$6,024	$59,842	$5,464	$199,276	**$270,606**
Future health costs from smoking	$19,422	$78,978	$8,967	$220,614	**$327,982**
Tobacco control government funding	$10,525	$68,566	$6,682	$220,614	**$306,387**

Source: Deloitte Access Economics calculations. Components may not sum to totals due to rounding.

Table B.2: **Impact of one-way sensitivity analyzes on the cost of appearance-based discrimination, 2019** ($ millions)

CASE	HEALTH OUTCOMES	LABOR MARKET	OTHER COSTS	TOTAL
Base case	**$316,997**	**$181,585**	**$2,686**	**$501,269**
Prevalence				
Lower (–20%)	$255,440	$145,268	$2,191	**$403,187**
Upper (+20%)	$377,937	$217,902	$3,183	**$599,023**
Wage and employment effect				
Lower (–20%)	$316,997	$145,268	$2,686	**$464,951**
Upper (+20%)	$316,997	$217,902	$2,686	**$537,586**
PAFs				
Lower (–20%)	$154,944	$181,585	$1,825	**$338,354**
Upper (+20%)	$467,743	$181,585	$3,512	**$652,841**
Unit costs (health and productivity)				
Lower (–20%)	$300,451	$181,585	$2,686	**$484,723**
Upper (+20%)	$334,258	$181,585	$2,686	**$518,530**
Effect of changing attributions				
No efficiency losses	$309,527	$175,412	$2,475	**$487,414**
Broader weight–based discrimination scenario*	$316,997	$313,631	$2,686	**$633,314**
Skin shade discrimination scenario^	$316,997	$240,221	$2,686	**$559,904**

Source: Deloitte Access Economics calculations. Note: Components may not sum to totals due to rounding.
* describes a scenario where theaverage negative effect of weight discrimination for overweight and obese within race/ethnic group is applied equally to all people with a BMI of 25kg/m2 or higher (see section 5.2.4). ^ describes a scenario where the

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