

Measuring Burnout in Zoo & Aquarium Professionals: A Case for Equity and Justice

Jordan Marino¹

¹Affiliation not available

March 24, 2023

Abstract

This study analysed the rates of burnout in zoo and aquarium employees to determine who experiences burnout. Previous research indicates that those who identify as women, LGBTQ+, and/or Black, Indigenous, and people of colour are more likely than peers to experience discrimination and mental health issues in the workplace - factors that trigger burnout. This study examined if burnout disproportionately affects people from historically marginalized groups. Researchers distributed a survey to recruit individuals currently working or who have previously worked at a zoo or aquarium. Out of 616 respondents, 91% reported that they had experienced burnout while working at a zoo or aquarium, and 60% stated that they had left a position because of burnout. Survey participants that identified as Black, Indigenous, and/or people of colour were significantly more likely than participants that identified as White to leave their positions because of burnout. Additionally, participants who experienced harassment and discrimination in their workplace were significantly more likely to experience burnout and leave their positions because of it. Zoos and aquariums should examine their employees' experiences with burnout to create a diverse and inclusive workplace.

Introduction

In 2019, World Health Organization (WHO) added Burnout Syndrome to the 11th Revision of the International Classification of Diseases. People who experience burnout may have symptoms like stress, exhaustion, energy depletion, and feeling unaccomplished as a direct result of chronic workplace stress ([WHO, 2019](#)). A study in 2017 found that job burnout can lead to many long-term health complications like heart disease, Type 2 diabetes, and major depressive disorder ([Salvagioni et al., 2017](#)). Harvard Business Review estimated that job burnout has resulted in \$125 billion to \$190 billion spent annually in healthcare costs ([Garton, 2017](#)).

Since the COVID-19 pandemic began, many people have left their jobs and careers, searching for ones that better fulfil their financial and personal needs ([Durcharme, 2021](#)). Many news outlets and social media discussions have described this as the “Great Resignation” ([Kaplan, 2021](#)). Many organizations and businesses have yet to take responsibility for this, as employers historically redirected blame to the employees. However, several studies discovered some key factors that lead to workplace burnout. Among the top five are an unreasonable workload, lack of support from management, and unfair treatment ([Maslach & Leiter, 2016](#)).

Burnout has been heavily researched in fields like healthcare and teaching, as these fields tend to be the most physically and emotionally demanding, with long hours ([Maslach et al., 2001](#)). Nurses, doctors, veterinarians, and teachers are also at risk of compassion fatigue. The American Psychological Association ([Clay, 2020](#))

explains that compassion fatigue happens when people take on the suffering, stress, and trauma experienced by others.

Those working at zoos and aquariums might recognize the symptoms of burnout and compassion fatigue. Research shows that similarly to healthcare workers, animal care workers take on the stress and trauma experienced by animals (Hill et al., 2020). There has not been a lot of research looking at burnout rates among zoo and aquarium professionals. Many facilities have increased their diversity, inclusion, and equity (DEI) initiatives in the last few years after a new accreditation standard was added to AZA accreditation. However, burnout and compassion fatigue might be perpetuating equity and justice issues.

A 2021 report from Women in the Workplace found that those who identified as women were significantly more likely to experience burnout than those who identified as men. The results from the survey demonstrate that despite putting in more hours and effort, women, specifically women of colour, were significantly less likely to advance in their careers. This situation causes people to feel under accomplished and underrecognized compared to their peers - a key factor in burnout. research indicates that those who identify as women (Miller, 2021), LGBTQ+ (Samuels et al., 2021), and/or Black, Indigenous, and people of colour (Basma et al., 2021) are more likely than their peers to experience discrimination and mental health issues in the workplace, which can also lead to burnout.

Organizations like zoos and aquariums can try new recruitment strategies and training programs to increase the number of diverse employees. However, facilities' "diversity" numbers will not last if burnout disproportionately affects specific groups. Organizations need to understand who experiences burnout and how to support those individuals, as this will help build their equity and justice initiatives.

This study aims to determine the rates of burnout within historically marginalized groups working at zoos and aquariums. The study also examines how various forms of harassment and discrimination lead to burnout. Lastly, this study looks at individuals' work experiences to determine if they are more likely to have positive or negative experiences while working at zoos and aquariums. Individuals from historically marginalized groups and those who experience harassment and discrimination are expected to have higher rates of burnout.

By surveying people who are working or have previously worked at zoos and aquariums, we can answer the question, "Do people from historically marginalized groups (race, gender, sexuality, disability) experience higher rates of workplace burnout in zoo & aquarium careers than people who identify as white, men, straight, and/or non-disabled?"

Materials and Methods

The survey was created with the online surveying software Qualtrics and had 32 questions. It was posted in two professional Facebook groups, Zookeeper to Zookeeper and Public Aquarium Aquarists, on the subreddit r/Zookeeping and sent to three professional zookeeper organizations. The survey was open for data collection for one month. After the closing date, unfinished surveys were removed from the study sample.

All subjects participated voluntarily and provided informed electronic consent to participate in this study. The procedures were reviewed for and found to be in adherence to the principles for the ethical conduct of research as described in the Belmont Report and Declaration of Helsinki. The research plan was reviewed and approved by the Miami Research Ethics and Integrity Office (protocol ID: 04300e).

The first section asked about the participant's general work history to gather information about what area of the facility the participant worked in, the number of hours per week they spent working, and their annual household income. The first section also collected the participant's demographic information, including their gender, age, race and ethnicity, disability status, and sexual orientation. The choices for these questions were designed to be as inclusive as possible based on current research. Previously, demographic data has been split into race and ethnicity. However, new research suggests that combining these into one question

without using the terms “race” or “ethnicity” can be more accurate ([“Is being Hispanic a matter of race, ethnicity or both?”](#), 2015).

The next section of the survey asked about symptoms associated with burnout. This section asked respondents to rate how frequently they experience specific scenarios associated with their work. The third section asked participants five questions about their experiences with harassment or discrimination at work. The participants could respond to these questions with “Yes,” “No,” or “No, but I’ve witnessed it happening to co-workers.” The last section of the survey provided participants with a definition of burnout from the World Health Organization and asked two yes or no questions (Table 1).

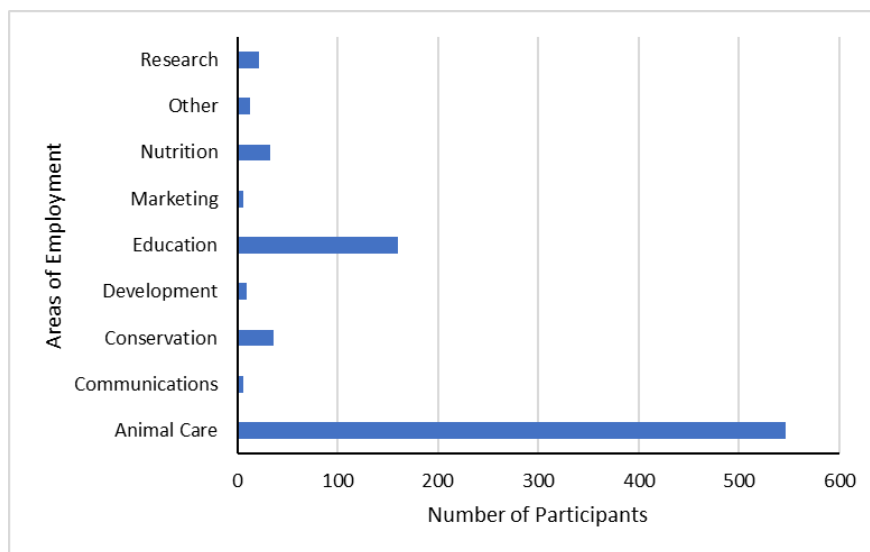
Table 1	
<i>Survey questions that were included regarding burnout.</i>	
Q1	Have you ever or are you currently experiencing workplace burnout at a zoo or aquarium?
Q2	Have you ever quit a job at a zoo or aquarium or moved to a different position because of workplace burnout?

The data was analysed using inferential statistics. A z-test for two proportions was used to compare the proportion of individuals who responded “Yes” to Q1 and Q2 based on specific variables. A paired t-test was used to compare the mean frequency of participants’ positive experiences at work to their negative experiences. Descriptive statistics were used to visualize the study sample.

Results

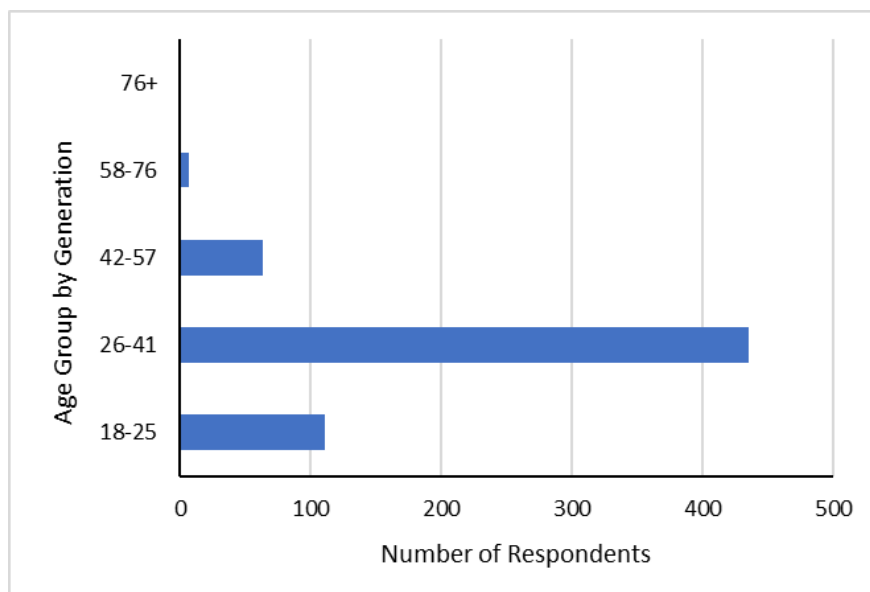
The survey received a total of 766 responses. Unfinished responses and responses from participants outside of the United States were removed from the study sample, bringing the total number of responses to 616 ($N = 616$). Most participants worked in animal care, followed by education, conservation, and nutrition (Figure 1).

Figure 1
Areas of the zoo or aquarium that the participant worked.



On average, participants held 1.53 jobs and worked 42.88 hours per week. The median number of jobs held per participant was 1 and the median number of hours worked per week was 41. The majority of participants (69%) held a bachelor's degree and had an annual household income of \$30,000 to \$44,999 and one individual in their household, including themselves. 71% of participants were millennials between the ages of 26 to 41 (Figure 2).
















Figure 2
Ages of participants seperated by generations.



Overall, 91% of participants reported experiencing burnout while working at a zoo or aquarium (Q1), and 60% of participants reported quitting their jobs or changing positions because of burnout (Q2). Table 2

shows the percentage of respondents in each demographic that responded “Yes” to Q1 or Q2.

Table 2
Percentage of Participants that Responded "Yes" to Q1 and Q2 by Demographic.

Gender	Third Gender	Men		p
Q1	92%	89%		.316
Q2	60%	44%		.089
Gender	Women	Men		p
Q1	91%	89%		.258
Q2	50%	44%		.181
Sexual Orientation	LGBTQ+	Straight		p
Q1	92%	90%		.202
Q2	53%	49%		.166
Race & Ethnicity	BIPOC	White		p
Q1	92%	91%		.331
Q2	61%	48%		.023
Disability Status	Disabled	Non-disabled		p
Q1	96%	90%		.070
Q2	54%	49%		.276

The p -value indicates if the percentage in the first column is significantly greater ($p < .05$) than the percentage in the right column (i.e., if the percentage of Men who said Yes to Q1 was significantly greater than those who identified as a third gender. Participants who identified as Black, Indigenous, and/or People of Colour (BIPOC) were significantly more likely ($p = .070$) than participants who identified as only White to leave their jobs or current position because of burnout. In every other pairing, there was no significant difference between the percentages of respondents.

Table 3 shows the five questions about harassment and discrimination with the percentage of respondents who marked “Yes.” Tables 4 through 7 show the percentages of respondents that responded “Yes” to Q1 and Q2, organized by their responses to these five questions. A through E refer to the questions in Table 3 labelled respectively. Each of the five questions (Table 3) asked participants about a different form of harassment and discrimination.

Table 3

Percentage of respondents who marked "Yes" to survey questions on harassment & discrimination.

	Question	Percentage
QA	Have you ever been discriminated against in the workplace based on your race, ethnicity, gender identity, sexual orientation, English skills, or disability(ies)?	22%
QB	Have you ever been overlooked for promotions based on your race, ethnicity, gender identity, sexual orientation, English skills, or disability(ies)?	12%
QC	Have you ever received unfair treatment at work based on your race, ethnicity, gender identity, sexual orientation, English skills, or disability(ies)?	25%
QD	Have you ever experienced microaggressions at work from coworkers, supervisors, or visitors based on your race, ethnicity, gender identity, sexual orientation, English skills, or disability(ies)?	39%
QE	Have you ever experienced sexual harassment at work from coworkers, supervisors, or visitors?	32%

In every single category, participants who experienced some form of harassment and discrimination were significantly more likely ($p < .01$) to experience burnout and significantly more likely ($p < .01$) to change their job because of burnout than participants who had not experienced harassment or discrimination (Tables 4 and 5).

Table 4

Rates of burnout between participants who have experienced harassment and discrimination compared to participants who have not.

	Question				
Response	QA	QB	QC	QD	QE
Yes	96%	99%	98%	95%	94%
No	86%	88%	86%	85%	87%
p-value	.001	.003	.001	.001	.009

Table 5

Rates of burnout between participants who have witnessed harassment and discrimination compared to participants who have not.

	Question				
Response	QA	QB	QC	QD	QE
Witness	97%	97%	98%	95%	94%
No	86%	88%	86%	85%	87%
p-value	.001	.007	.001	.003	.019

Additionally, participants who witnessed their co-workers experiencing harassment and discrimination were significantly more likely ($p < .05$) to experience burnout and change jobs because of it than participants who did not experience or witness harassment and discrimination (Tables 6 and 7).

Table 6

Rates of burnout that led to quitting between participants who have experienced harassment and discrimination compared to participants who have not.

	Question				
Response	QA	QB	QC	QD	QE
Yes	66%	66%	63%	57%	55%
No	41%	45%	44%	43%	44%
p-value	.001	.001	.001	.001	.007

Table 7

Rates of burnout that led to quitting between participants who have witnessed harassment and discrimination compared to participants who have not.

	Question				
Response	QA	QB	QC	QD	QE
Witness	56%	61%	54%	51%	55%
No	41%	45%	44%	43%	44%
p-value	.001	.002	.038	.066	.017

Participants were asked to rate how frequently they experienced symptoms related to burnout. The four choices were Never, Some Days, Most Days, and every day. The choices were given a corresponding numerical value, with Never=0, Some days=1, Most Days=2, and Every Day=3. For example, if participants chose “Never,” their answer would be a 0 because they did not experience the symptom. There were four negative statements and five positive statements regarding the participants’ experiences at work.

The frequency of negative statements and positive statements was averaged per participant. On average, participants had a mean frequency of positive experiences at 1.33 ± 0.49 . This means that participants had positive experiences at work between some days and most days on average. The range of frequencies was 0.20 to 2.80, which indicates that all participants had at least one positive experience associated with work. However, no participant experienced every positive statement every day at work.

Participants had a mean frequency of negative experiences at 1.61 ± 0.63 . The mean frequency of negative experiences was significantly greater ($p < .01$) than positive experiences. In other words, participants had negative experiences at work more frequently than positive ones. The range of frequencies for negative experiences was 0.00 to 3.00. The range demonstrates that at least one participant did not experience any of the negative statements listed in the survey. Additionally, at least one participant experienced each negative statement every day.

Discussion

The average participant worked more than one job and more than a standard 40-hour work week. Given that the median hours worked per person was 41, 50% of survey participants worked more than a 40-hour work week. The Occupational Safety & Health Administration (OSHA, 2022) explains that long work hours lead to higher stress levels and increase the risk of illnesses and injuries related to occupational hazards. Research on worker fatigue and long working hours has been around for over 15 years. One study from 2006 found that extended and irregular hours led to stress, fatigue, and increased rates of smoking (Johnson & Lipscomb, 2006).

Over 70% of survey participants were between the ages of 26 and 41. One survey question asked how many years a respondent had in the field. However, this question was voided due to an error in the survey. Since most survey participants were mid-career and well before retirement age, we can infer that people experience burnout regardless of their age or years in the workforce. More research is needed on this topic.

This study aimed to determine who experiences burnout and why - not if zoo & aquarium professionals experience burnout at all. Therefore, there is some selection bias in the individuals that responded to the survey. The invitation included that the study was researching burnout. Therefore, people already experiencing burnout may have felt more inclined to participate. Still, over 90% of participants reported that they had experienced burnout while working at a zoo or aquarium.

Most participants had a household income of \$30,000 to \$44,999 while supporting themselves. The Massachusetts Institute of Technology’s living wage calculator (2022) states that South Dakota has the lowest living wage in the United States at \$14.85 per hour or \$30,888 annually. In 2021, Janzen and Hellsten found a correlation between low household income and greater psychological distress, a factor that can contribute to burnout (Janzen & Hellsten, 2021).

Altogether, the long working hours, low household income, and physically and emotionally demanding workload create working conditions associated with burnout. Results from the survey reported these conditions. Therefore, it is unsurprising that over 90% of the 616 survey participants reported experiencing burnout. This study aimed to dig in further and discover burnout’s underlying causes and effects.

Since 2020, zoos and aquariums have seen a push to increase the number of diverse employees (Silver, 2021). Most of these efforts have been through social media campaigns, blog articles, and heavy recruitment. However, even if facilities hired more individuals from historically marginalized communities, the results

from this survey suggest that those who identify as Black, Indigenous, and people of colour (BIPOC) are significantly more likely to leave the field because of burnout.

Additionally, this study showed that participants who experienced some form of harassment and discrimination in their workplaces were significantly more likely to experience burnout. Previous research in the medical field has shown that discrimination, abuse, and sexual harassment are associated with high levels of burnout in women working in the medical field (Hu et al., 2019). According to a Gallup poll in 2021, 24% of Black and/or Hispanic employees felt discriminated against at work. Multiple research studies have shown that Black, Indigenous, and people of colour are less likely than White employees to receive promotions at work (Yap & Konrad, 2010).

People from historically marginalized communities face numerous barriers in the zoo and aquarium industry. Not only is there a substantial financial barrier to gaining experience and gaining entry (Colton, 2022), but once an individual enters the field, their experiences can quickly lead to burnout. The results from this study suggest that efforts to retain and support employees from historically marginalized groups should be focused on addressing burnout.

(“Does Diversity Training Work the Way It’s Supposed To?”, 2019) share that almost all Fortune 500 companies participate in diversity, equity, and inclusion (DEI) training, but the results of these trainings typically do not last. They explain that effective equity and justice initiatives come from systemic organizational changes.

Conclusion

The past few years have seen historic employee turnover, which has triggered conversations about how organizations can better support their employees. Additionally, organizations have ramped up their DEI initiatives over the past two years. Previously there was not much research linking burnout and employee turnover to equity and justice initiatives. However, the results from this study show that organizations focused on addressing burnout should specifically consider how they are supporting employees from historically marginalized communities.

Acknowledgements

I would like to express thanks and acknowledgement to the professors, instructors, and advisors that have guided me throughout my research and work, including Dr. Mathew Hallet, Leah Crowe, Jamie Anzano, and Dr. Jill Korach. My completion of this project could not have been accomplished without the generous support and feedback from my colleagues, Julianne Turner, Becca Stievater, May McGraw, Robin Perez, Katie Emmons, Shannon College, and Lisa Yaeger. Thank you to American Association of Zoo Keepers (AAZK) for sharing my work with the AAZK members in *Animal Keepers’ Forum*. Lastly, I would like to express my gratitude to Miami University and Project Dragonfly for encouraging me to challenge ideas, pursue inquiry, and engage my community.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author, JM. The data are not publicly available due to restrictions containing information that could compromise the privacy of research participants.

References

- Burn-out an occupational phenomenon: International Classification of Diseases. (2019). *World Health Organization*. <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>
- van Wouwe, J. P. (Ed.). (2017). Physical psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PLOS ONE*, 12(10), e0185781. <https://doi.org/10.1371/journal.pone.0185781>
- Employee Burnout Is a Problem with the Company, Not the Person. (2017). *Harvard Business Review*. <https://hbr.org/2017/04/employee-burnout-is-a-problem-with-the-company-not-the-person>
- The 'Great Resignation' Is Finally Getting Companies to Take Burnout Seriously. (2021). *TIME*. <https://time.com/6106656/workplace-burnout-pandemic/>
- The psychologist who coined the phrase 'Great Resignation' reveals how he saw it coming and where he sees it going. 'Who we are as an employee and as a worker is very central to who we are.'. (2021). *Business Insider*. <https://www.businessinsider.com/why-everyone-is-quitting-great-resignation-psychologist-pandemic-rethink-life-2021-10>
- Understanding the burnout experience: recent research and its implications for psychiatry. (2016). *World Psychiatry*, 15(2), 103–111. <https://doi.org/10.1002/wps.20311>
- Job Burnout. (2001). *Annual Review of Psychology*, 52(1), 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- Are you experiencing compassion fatigue?. (2020). *American Psychological Association*. <https://www.apa.org/topics/covid-19/compassion-fatigue>
- Compassion fatigue in animal care workers.. (2020). *Traumatology*, 26(1), 96–108. <https://doi.org/10.1037/trm0000218>
- SHRM Study: Lower-Income Earners, Women, Minorities Face Greater Mental Health Challenges. (2021). *Society for Human Resource Management*. <https://www.shrm.org/resourcesandtools/hr-topics/benefits/pages/shrm-study-greater-mental-health-challenges.aspx>
- Association Between Sexual Orientation Mistreatment, and Burnout Among US Medical Students. (2021). *JAMA Network Open*, 4(2), e2036136. <https://doi.org/10.1001/jamanetworkopen.2020.36136>
- Examining Wellness Burnout, and Discrimination Among BIPOC Counseling Students. (2021). *Journal of Multicultural Counseling and Development*, 49(2), 74–86. <https://doi.org/10.1002/jmcd.12207>
- (2015). *Pew Research Center*. <https://www.pewresearch.org/fact-tank/2015/06/15/is-being-hispanic-a-matter-of-race-ethnicity-or-both/>
- Long Work Hours, Extended or Irregular Shifts, and Worker Fatigue - Overview — Occupational Safety and Health Administration. (2022). *Occupational Safety & Health Administration*. <https://www.osha.gov/worker-fatigue>
- Long working hours occupational health and the changing nature of work organization. (2006). *American Journal of Industrial Medicine*, 49(11), 921–929. <https://doi.org/10.1002/ajim.20383>
- Household Income and Psychological Distress: Exploring Women's Paid and Unpaid Work as Mediators. (2021). *International Journal of Environmental Research and Public Health*, 18(12), 6402. <https://doi.org/10.3390/ijerph18126402>
- Elevating the Importance of Diversity, Equity, Access and Inclusion. (2021). *Connect*. <https://www.aza.org/connect-stories/stories/importance-of-diversity-equity-access-inclusion->

zoos-aquariums

Discrimination Abuse, Harassment, and Burnout in Surgical Residency Training. (2019). *New England Journal of Medicine*, 381(18), 1741–1752. <https://doi.org/10.1056/nejmsa1903759>

Gender and Racial Differentials in Promotions. (2010). *Articles*, 64(4), 593–619. <https://doi.org/10.7202/038875ar>

The price of experience: An examination of zoo and aquarium internships.. (2022). *Animal Keepers' Forum*. value https://www.researchgate.net/publication/359928445_The_Price_of_Experience_An_examination_of_zoo_and_aquarium_internshipsere

(2019). *Harvard Business Review*. <https://hbr.org/2019/07/does-diversity-training-work-the-way-its-supposed-to>