Unveiling the Landscape of Pressure Injuries: Insights from Kalogon's Inaugural Seating and Sitting Survey

Inaugural Seating & Sitting Survey

In January 2024, Kalogon unveiled new insights into the impacts of seating across the spectrum of the U.S population. The Inaugural Seating & Sitting Survey, comprising 36 questions, delves into individuals' feelings about sitting, duration of sitting, comfortable and uncomfortable seating locations, and the prevalence of pressure injuries among respondents. A single survey was fielded to two audiences: the U.S. general population, consisting of 1,045 individuals, and individuals who use wheelchairs, with 272 total respondents. This report analyzes the data collected from the U.S. general population. The survey was programmed using Centiment online survey tools and was fielded Oct 20 - Nov 29, 2023.

The results not only reaffirm Kalogon's prior research outcomes but also presents new data regarding individuals who have suffered from pressure injuries (PIs). The findings underscore the critical importance of understanding and addressing PIs, a leading cause of preventable death. This information contributes significantly to Kalogon's mission of promoting an active, seated lifestyle for individuals who are required to sit for extended periods of time.

The Impact of Pressure Injuries

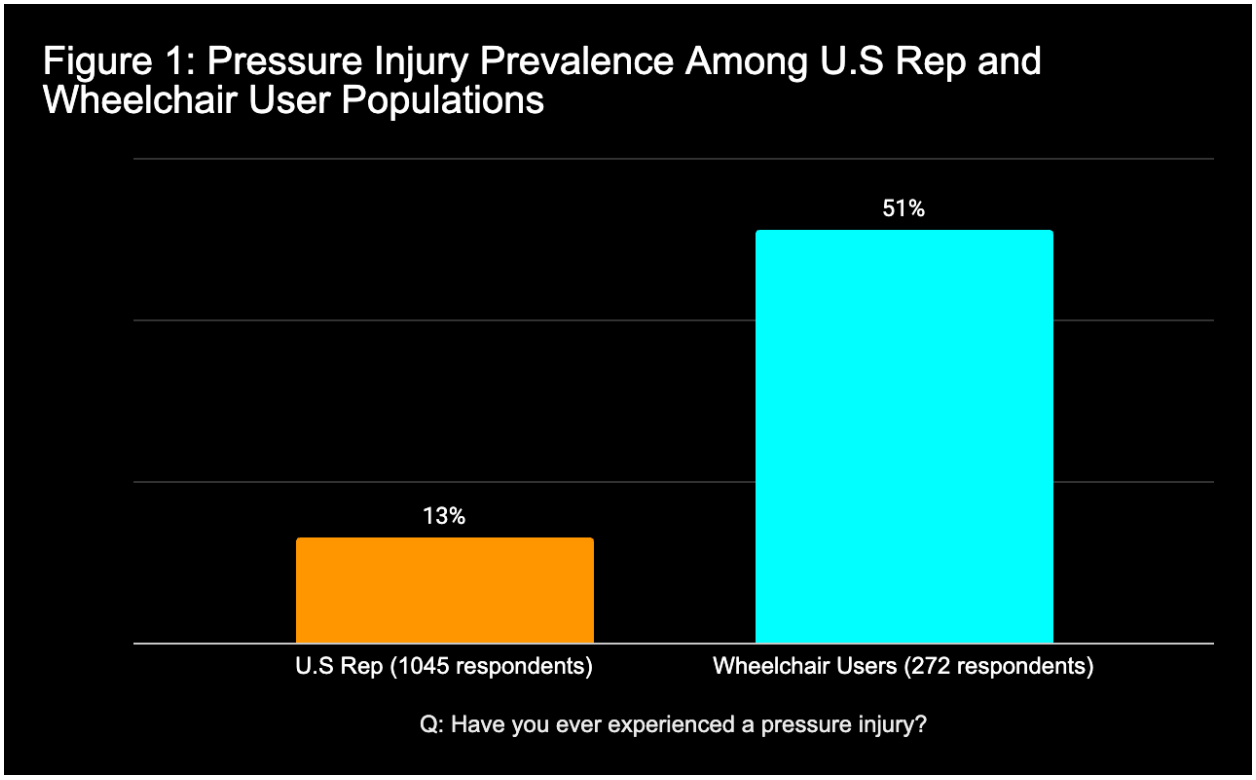
Pressure injuries pose a devastating threat, affecting the lives of 2.5 million people per year with around 60,000 deaths annually within the United States alone. PIs can result in substantial financial implications, with costs ranging from $20,900 - $151,700 per injury. Annually, there are over 17,000 lawsuits related to PIs, making it the second most common cause of litigation after wrongful death [1].

Pressure injuries manifest as localized skin injuries in areas subjected to prolonged pressure, typically occurring over bony prominences. This impedes the blood flow necessary for delivering adequate oxygen and nutrients to these tissues [2]. Ongoing pressure restricts blood flow by compressing the tissue, while shear force stretches and distorts the internal tissue. As pressure injuries develop in areas where blood flow is limited, the dead necrotic tissue can progress into layers of dermis, subcutaneous fat, and eventually reach the cartilage and bone [3].

The Inaugural Seating & Sitting Survey, yielded compelling results that highlight the prevalence of pressure injuries. Within the total U.S representative population, 16% have a disability that requires sitting for extended periods. In this group, 14% use a

wheelchair for at least 30 minutes a day , representing about 2% of the total U.S Rep population [4].

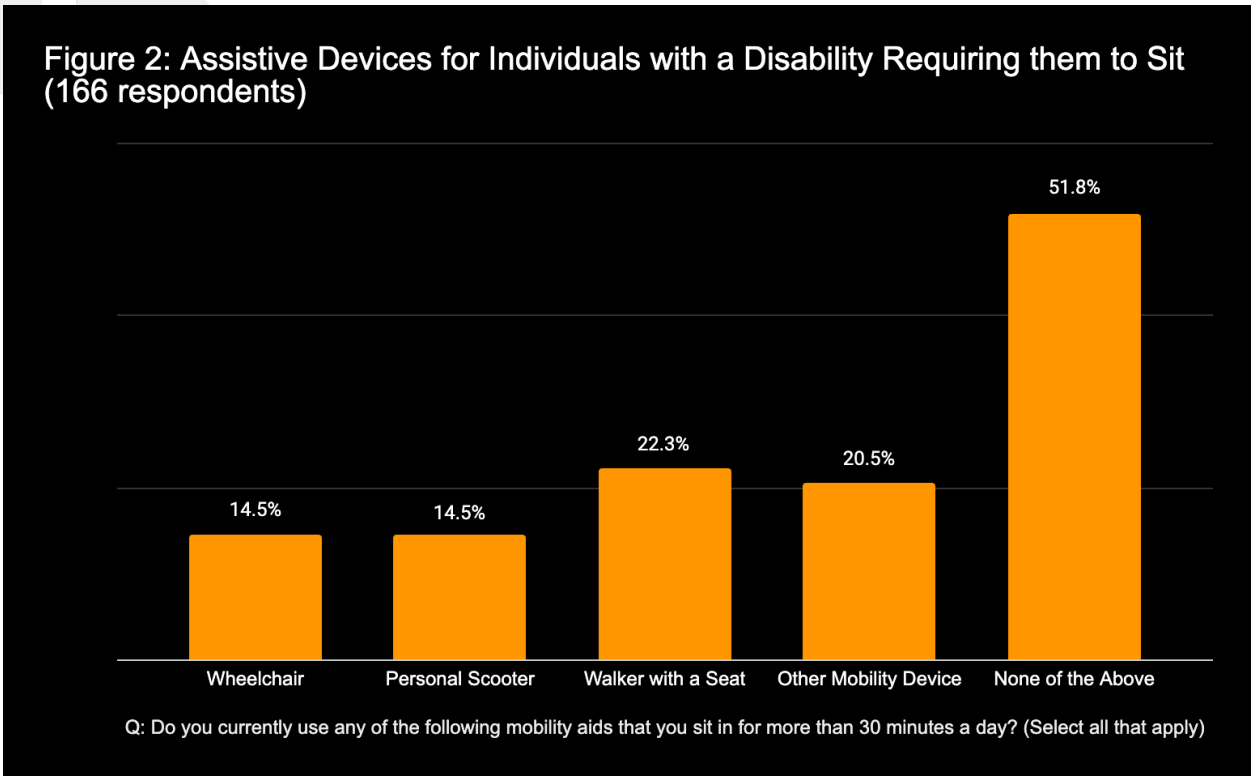
Furthermore, wheelchair users represent a substantial portion of respondents reporting pressure injuries, with about half (51%) of this population indicating that they have experienced a PI. Among the U.S Rep population, 13% reported experiencing pressure injuries from sitting. Figure 1 illustrates the prevalence of these PIs among the U.S Rep population compared to the Wheelchair User population [4].



Understanding Diverse Seating Needs

The U.S population consists of a diverse array of individuals, each with their own unique needs and varying levels of mobility. Responses from different questions were cross-referenced in order to narrow down our audience and identify common factors.
A total of 166 respondents in the US Rep population reported that they have a disability that requires them to sit for extended periods of time. Among this population, respondents reported utilizing a diverse range of assistive devices. As illustrated in Figure 2, a significant number of these individuals were discovered to not use any assistive device. This underscores that the absence of an assistive device does not

always mean an absence of extended sitting, putting individuals at risk for pressure injury.

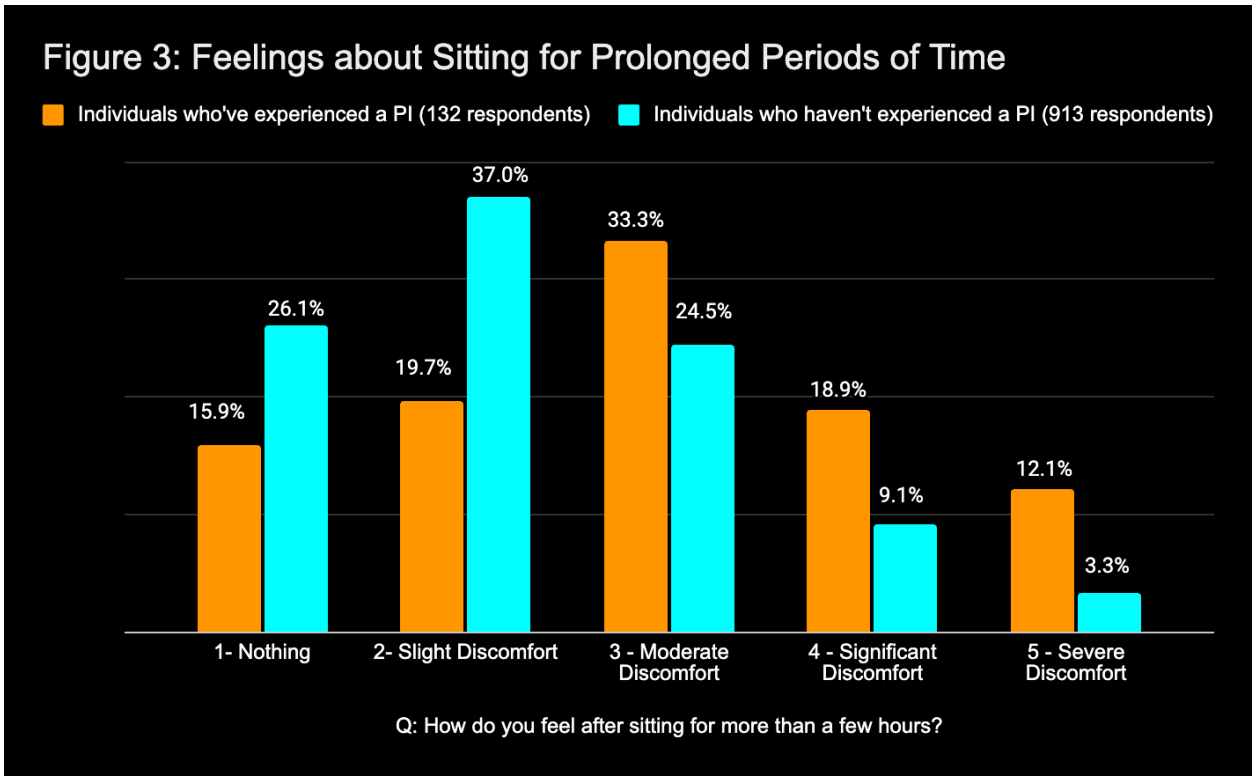


Note: the question from the survey regarding mobility aids allowed respondents to select multiple options, leading to a total percentage exceeding 100% within the U.S Rep population.

Furthermore, a total of 132 respondents in the U.S Rep population indicated experiencing a pressure injury by selecting “yes” to the question “have you ever experienced a pressure injury?” These responses were cross-referenced with other related survey questions, including how respondents feel about sitting for extended periods of time. Figure 3 examines two sample populations regarding prolonged seating, including individuals who haven’t experienced a pressure injury. Participants were asked to rate their level of comfort when sitting for prolonged periods of time, with a scale ranging from 1 (no discomfort) to 5 (severe discomfort). A notably high percentage of individuals who have not experienced a PI reported feeling discomfort, with a dramatic increase in respondents who reported feeling “slight discomfort”.

For individuals that have experienced a PI, the distribution is relatively even across discomfort levels with a higher prevalence of respondents that reported experiencing

"moderate discomfort". Given that 64% of respondents who've experienced a PI reported experiencing moderate to severe discomfort, it is likely that these individuals are far more aware and sensitive towards the pain they experience, in contrast to the 37% who haven't experienced a PI. Overall, this data unveils how feelings of discomfort are pervasive among a wide array of individuals, extending beyond those who have experienced a PI.

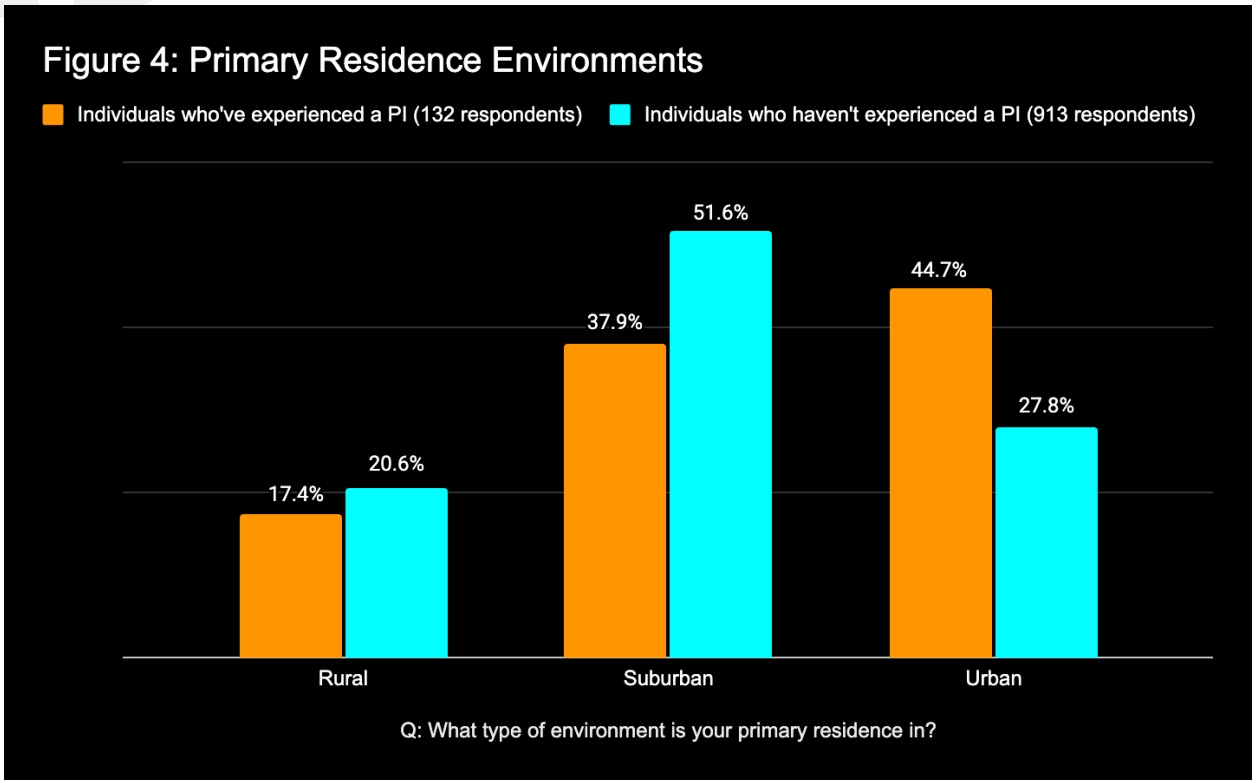


Demographic Insights

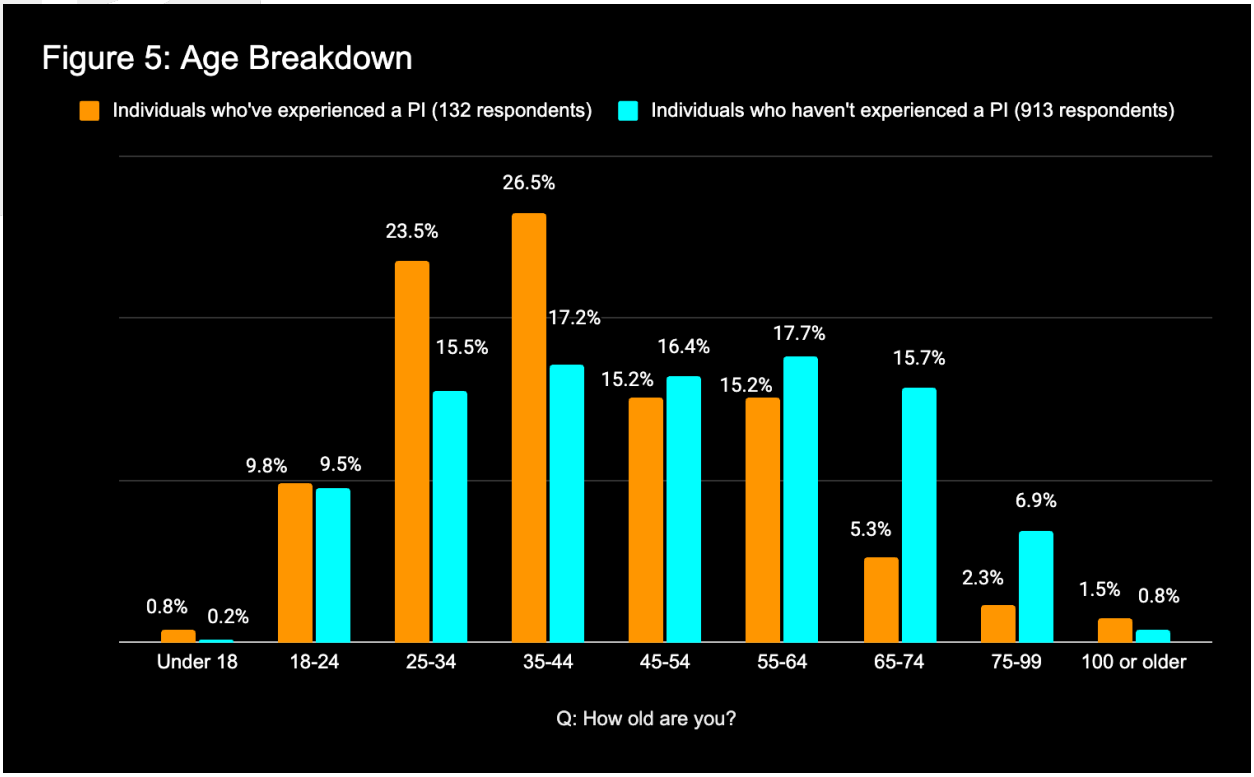
Factors such as demographics encompassing age, gender, and primary residence environments, all play a pivotal role in better understanding our survey audience and the diverse landscape or pressure injuries.

Figure 4 breaks down the primary residence environments for the total U.S Rep population compared to individuals who have experienced a pressure injury from sitting. Nearly half of the 132 population pool experiencing pressure injuries reside in urban areas, while the lowest proportion from this same population pool reside in rural environments. The higher prevalence of pressure injuries amongst urban residents may be attributed with better access to care, leading to a greater likelihood for a proper

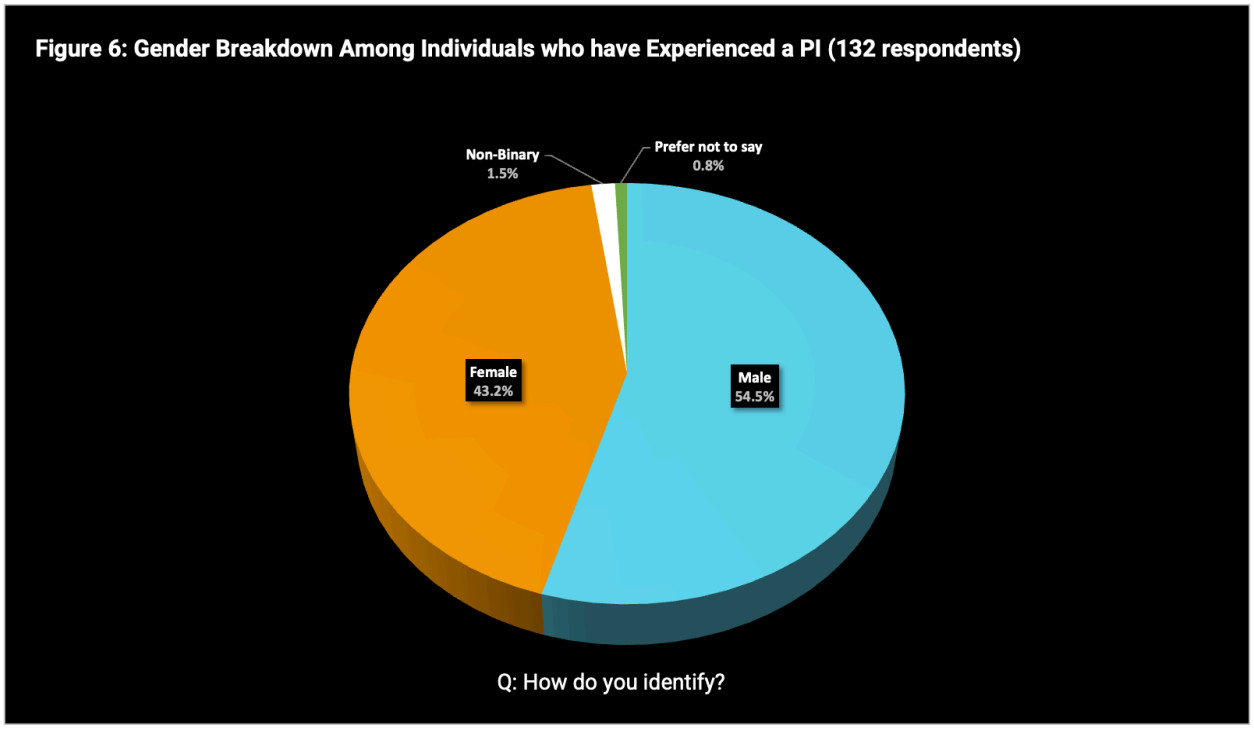
diagnosis. Individuals with PIs living in rural environments may encounter more barriers accessing this level of care, resulting in a lower proportion of respondents who are aware that they have developed a pressure injury. Further investigation will be needed to determine the cause of these results.



In terms of age distribution, Figure 5 reveals a significant increase in individuals with pressure injuries within the age ranges of 25-34 & 35-44. A cohort study by Saunders et. Al. (2010) surveyed 1,466 white and African American adults in order to identify risk factors associated with pressure ulcers as a result of spinal cord injury. This study revealed that the average age of pressure injury development was 32.5 years, aligning with the findings extracted from Kalogon's survey [5]. For spinal cord injuries alone, the average age at injury has jumped from 29 years old to 43 years over the past 50 years [6].



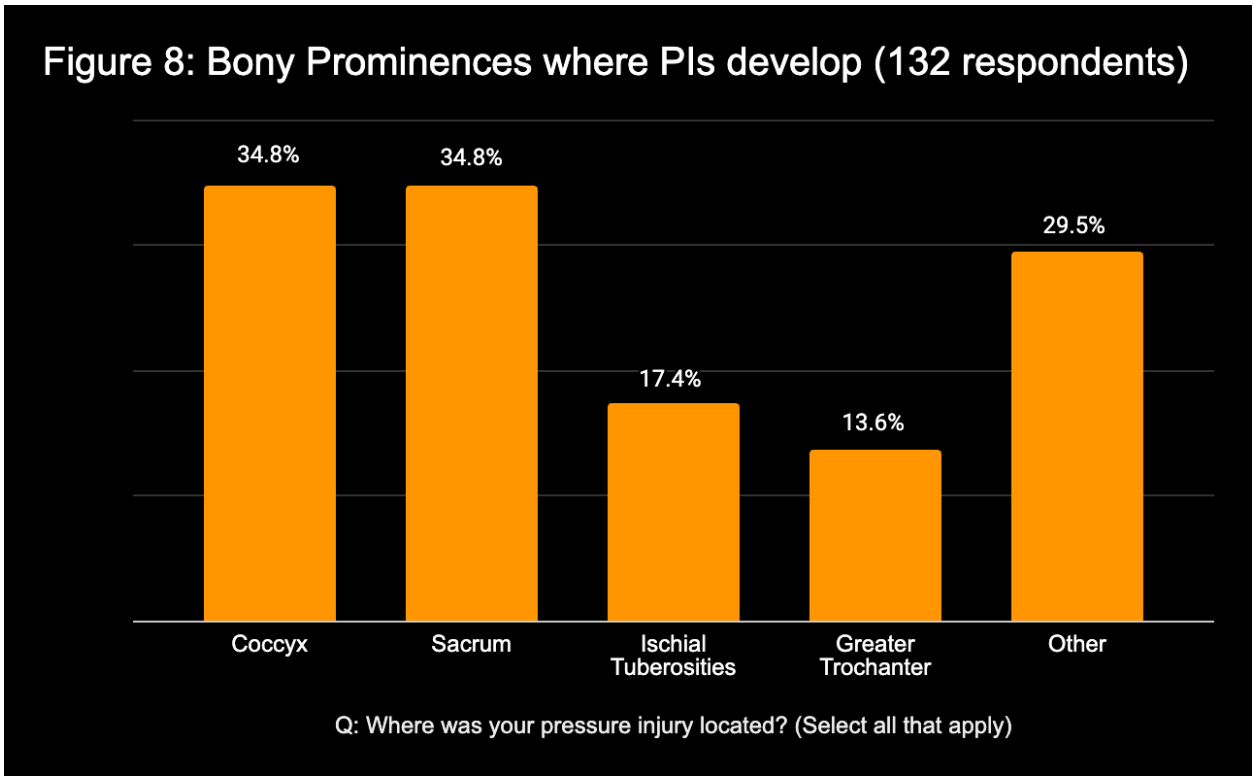
The prevalence of pressure injuries among this young demographic may be the result of a higher prioritization of routine check-ins with primary care providers compared to older generations. However, more research will need to be conducted to determine if this hypothesis is accurate. In terms of gender distribution, a slightly higher proportion of males compared to females reported to have experienced a PI as illustrated in Figure 6.



Pressure Injury Stages & Vulnerable Areas

Pressure injuries progress through a series of stages, with a relatively equal distribution of these stages observed among our respondents as indicated in Figure 7. Stages 1 and 2 begin with redness around the localized area, which develops into a shallow open ulcer that leads to the loss of the upper dermal layer. Stages 3 & 4 pose a more serious threat as the ulcer penetrates deeper into the epidermis and dermis layers, ultimately exposing bone, tendon, or muscles [3]. Approximately half of respondents (49%) reported experiencing a stage 2 or stage 3 pressure injury.

Moreover, it's important to note that bony prominences such as the Sacrum, Trochanters, and Ischial Tuberosities are particularly vulnerable. This is due to these regions lacking the soft tissue necessary to facilitate proper blood flow circulation when under prolonged stress and pressure [2]. Some respondents reported PIs in areas such as the Ischial Tuberosities, Greater Trochanter, and in other locations. However, a majority of respondents reported experiencing a pressure injury near the Coccyx or Sacrum as indicated in Figure 8.

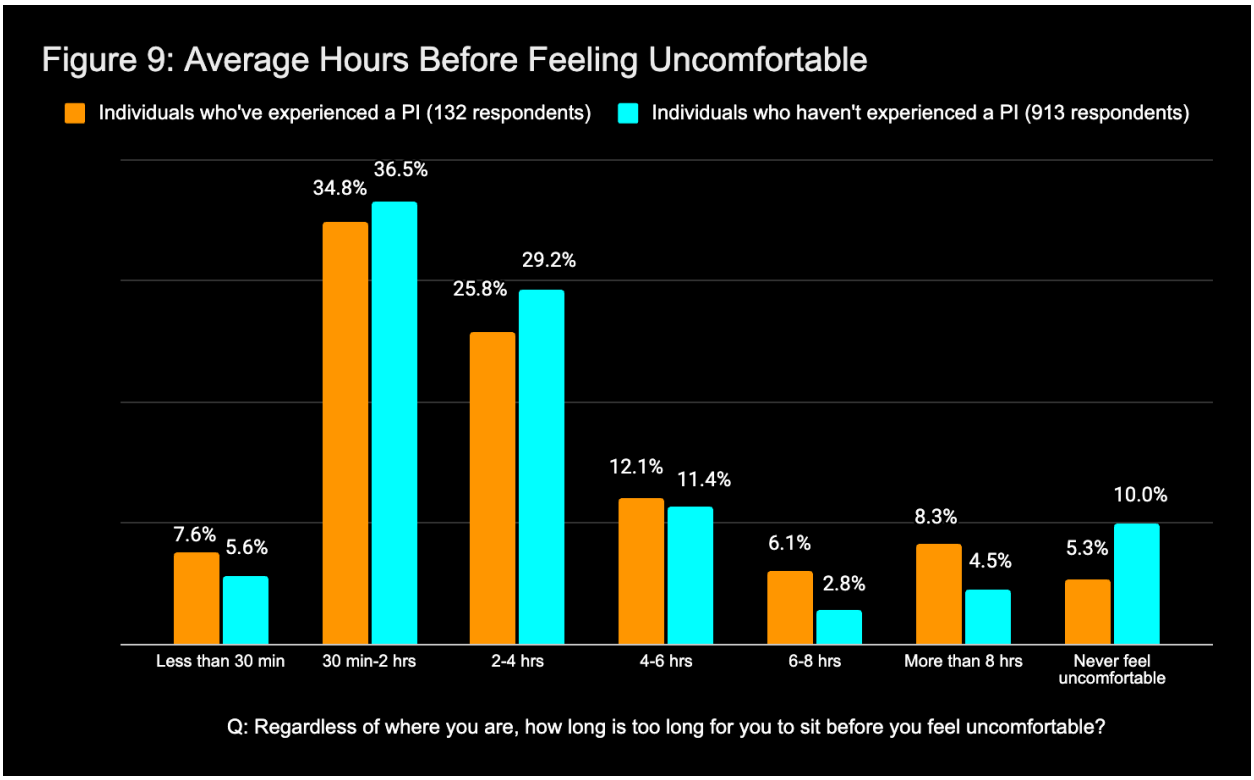


Note: the question from the survey regarding PI locations allowed respondents to select multiple options, leading to a total percentage exceeding 100%.

Discomfort & Sensations of Prolonged Sitting

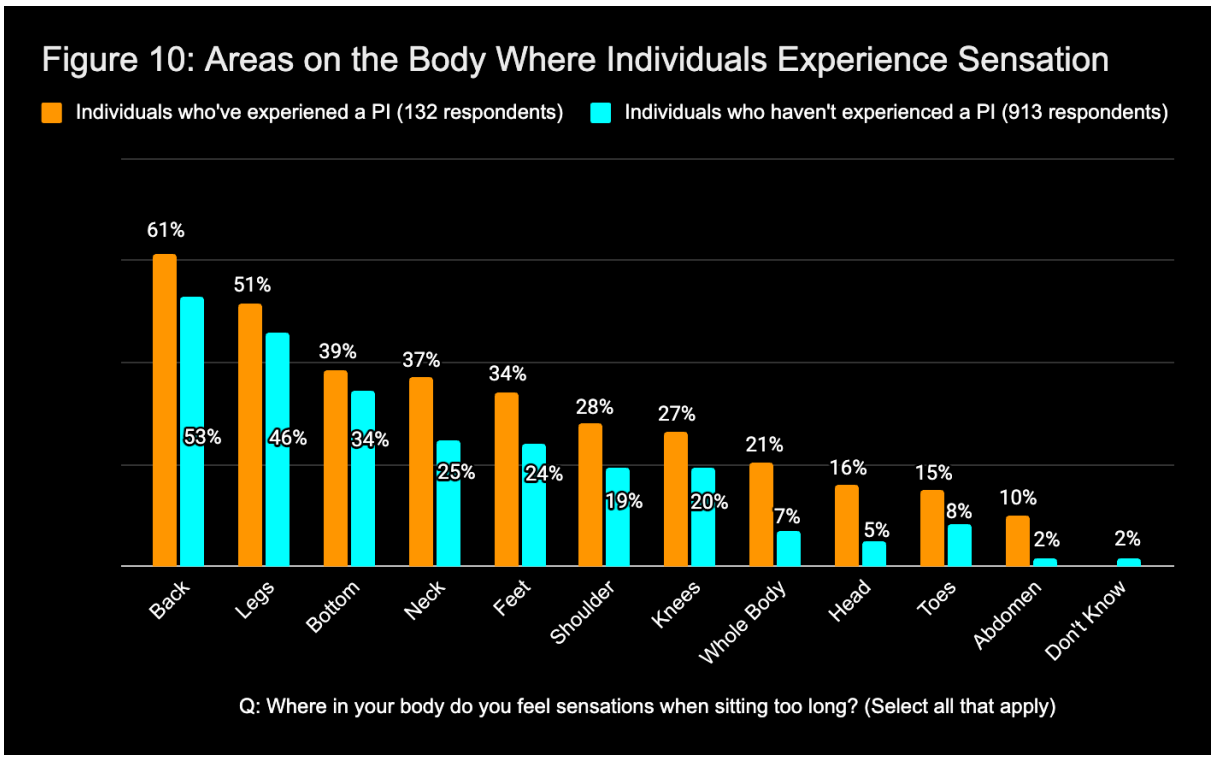
The majority or individuals, regardless of whether they have experienced a pressure injury or not, share a common experience: discomfort after sitting for extended periods of time. At some point in their life, the average U.S citizen will inevitably feel uncomfortable when required to sit for any reason. Figure 9 illustrates the average time it takes before both groups begin to experience discomfort.

As indicated in Figure 9, a significant amount of individuals who have not experienced a PI reported feeling uncomfortable all across the spectrum. For both populations, a significantly high prevalence of respondents reported experiencing discomfort within the range of 30 minutes to 4 hours. This data further proves how commonplace it is for individuals to feel uncomfortable after sitting, regardless of whether a pressure injury is present or not. When comparing both the U.S Rep and wheelchair user populations, there was a similar distribution of individuals reporting discomfort after sitting for 2 to 4 hours. At 19%, a notably small proportion of wheelchair users from the wheelchair user population reported discomfort when sitting for 30 minutes to 2 hours [4].



Among all the statistics that's been revealed from this survey, the data that most directly affects individuals with pressure injuries pertains to the sensations experienced due to prolonged sitting. Figure 10 reveals a high percentage of these individuals experiencing sensations around the back, legs, bottom, neck, and feet, including those who haven't experienced a PI.

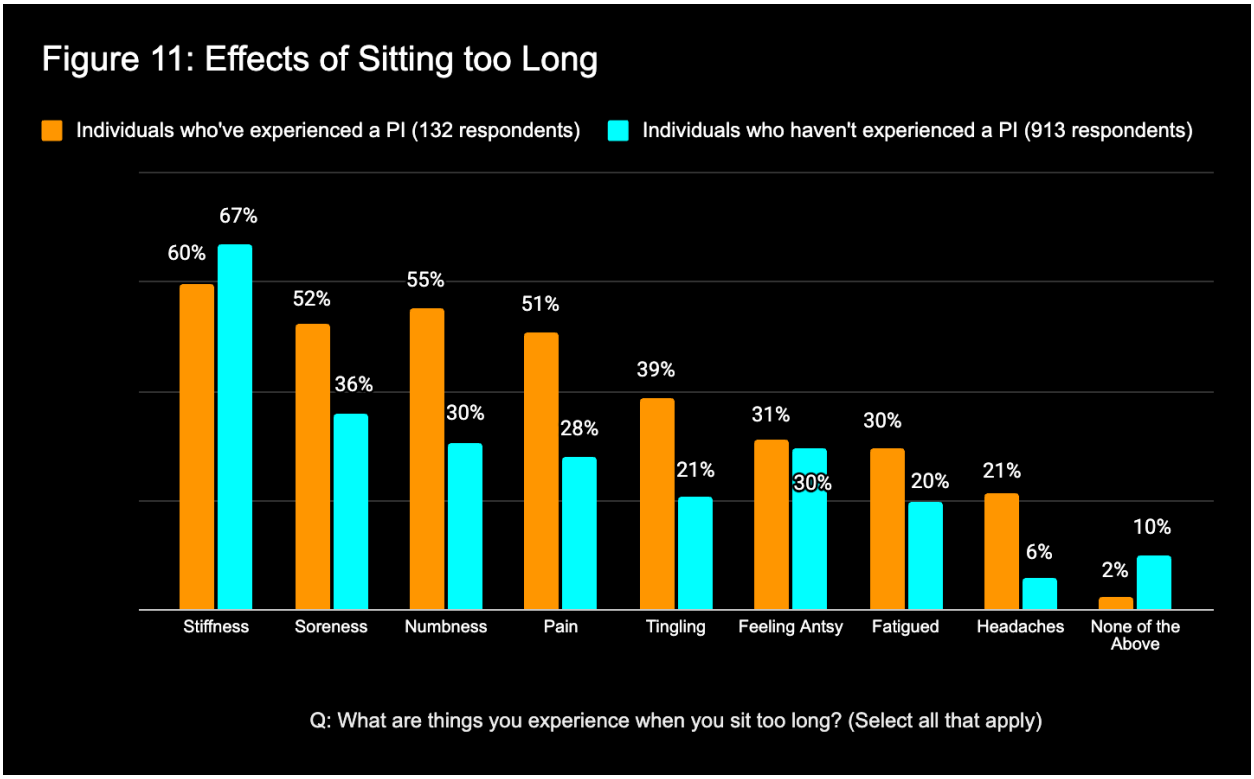
A staggering amount of individuals reported sensation in the back and legs. Even more compelling, were the high number of respondents who reported experiencing sensations in upper body regions such as the neck , shoulders, and head. These findings alone affirm how data from this inaugural survey continue to reveal statistics that deviate from initial expectations.



Note: the total percentage of this chart exceeds 100% as this question allowed respondents to select multiple options at once.

Out of the 132 population pool who experience PIs, the effects of sitting too long reveal a high percentage who experience stiffness , soreness, and numbness. Figure 11 details all of the sensations that are experienced by these individuals. A significant proportion of the 913 pool who haven't experienced a pressure injury selected "stiffness" as a sensation they experience.

Along with detailing the sensations experienced by individuals with PIs, this data was cross-referenced with the specific locations on the body where these sensations occur. The two most reported sensations among the areas of the back, legs, and bottom were stiffness and numbness. For the bottom area alone, stiffness accounted for 72% of individuals who experienced sensation in this area. Additionally, numbness in the bottom area was reported at 65% for these individuals.



Note: the total percentage of this chart exceeds 100% as this question permitted respondents to select multiple options at once.

Conclusion

The findings from Kalogon’s Inaugural Seating & Sitting Survey has revealed some compelling insights into the complex dynamics of pressure injuries at large. The survey uncovered valuable insights into pressure injuries, challenging preconceptions and broadening our understanding of this current medical crisis. The data not only validates prior research but also introduces critical information about the diverse demographics affected, debunking the notion that pressure injuries are exclusive to wheelchair users.

This survey highlights the urgent need for a comprehensive approach to prevention, and sheds light on vulnerable areas, stages of injuries, and the broader effects of prolonged sitting. Kalogon's commitment to promoting an active, seated life is reinforced by these survey findings, offering valuable data to further refine Kalogon’s products and interventions.

References

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