The influence of experience on the perception of homelessness in individuals

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SUMMARY

Economic disruptions and housing instabilities have for long propelled a homelessness epidemic among adults and youth in the United States. The COVID-19 pandemic has accelerated this phenomenon with a 2.2% increase in the number of homeless individuals and more than 70% of Americans fearing this outcome for themselves. This study aimed to analyze the perception of homelessness in two groups: Those who have previously experienced and overcome homelessness and those who are at-risk for experiencing the same. We hypothesized that people at risk perceived homelessness as a negative event, mainly driven by feelings of fear and uncertainty for their future, while those who had overcome the same perceived it as a humbling life lesson and an opportunity for growth. The study analyzed publicly available Reddit posts by people in both groups and found that at-risk individuals tended to associate primarily fearful emotions with the event, and those who had overcome homelessness tended to view the event in a negative context. These results may encourage the establishment of resources to support the currently homeless and help them transition into society, and services to help them cope with negative emotions, as negative attitudes have been shown to decrease life expectancy. We hope these results also inform the establishment of services for at-risk individuals and help mitigate ambivalence they might experience regarding their future.

INTRODUCTION

The United States' homeless population is consistently increasing. On a single night in January 2020, more than 580,000 individuals were experiencing homelessness in the United States, a marked increase from the previous year with around 560,100 homeless individuals (1). Increased housing costs and lack of affordable housing are seen as the primary cause, although mental health and addiction issues are also known to exacerbate the issue (2).

With the closing of many businesses due to the COVID-19 pandemic and safety measures, many daily wage workers lost their jobs. Shutdowns imposed by the COVID-19 pandemic reversed 113 prior consecutive months of job growth, with total employment falling by 20.5 million jobs in April of 2020 (3). Although the government supplied stimulus checks and small business loans through 2021, many Americans still struggled to fulfill basic needs with the growing disparity between income brackets (4). These situations, job loss, and housing insecurity incite fear in individuals for traumatic outcomes such as homelessness; they face anxiety regarding the uncertainty of their future (5).

In this study, we researched the way individuals who are at risk for homelessness and formerly homeless regard the idea of homelessness. In contrast, a previous study found a correlation between a past experience of homelessness and horizontal gratitude: thankfulness for unexpected interactions and events in our life (6). Therefore, we hypothesized that those who had overcome homelessness and have had time to reflect on the experience would perceive the event as one that provided them with the opportunity to grow and learn – an overall positive connotation. In parallel, we hypothesized that at-risk people would view the event within a negative context of fear and anxiety. We tested our hypotheses by analyzing Reddit posts from homelessness-related subreddits and counting occurrences of certain words with positive and negative connotations. Our study found that while at-risk individuals viewed the event primarily with feelings of fear, the formerly homeless viewed the event in a negative context rather than a positive one. Research has shown that continual negative feelings and hopelessness can cause chronic stress, which leads to a damaged immune system and decreases happiness and life expectancy, further underscoring the importance of our results for this audience (8). We hope that this study can help future researchers and policy makers gain insight into the experiences and emotions of individuals who are at risk of homelessness and individuals who are currently homeless. Our hope is that this study can guide the development of resources and policy for at risk individuals in particular, to help mitigate the fear and uncertainty they experience over their future.

RESULTS

To analyze the perception of homelessness and its intersection with experience, we performed a study by utilizing publicly available Reddit posts from homelessness-related subreddits and studied the frequency of certain keywords in generated text repositories. The results did not completely support our hypothesis **(Table 1, Figure 1).** Formerly homeless individuals did not recount their experience with a profoundly positive connotation. The words "learn," "taught," and "helped" (from the positive keywords) were present four, three, and five times respectively in the text repository **(Table 1, Figure 1).** When the occurrences of these words were investigated manually, most of the occurrences of "helped" were directed towards certain resources, such as the Salvation Army, that the individual found helpful in their journey. The occurrences of the word "taught" were used to indicate that the experience taught them empathy as cited

by one user; in most other contexts, the words "taught" and "learn" were used to indicate that the users learned more about human nature and instinct on the streets through their interactions with others.

Additionally, negative words occurred frequently in the text repository of formerly homeless individuals, underscoring that they might perceive such situations with negative emotions rather than a positive outlook. The words "terrible" and "sad" occurred seven and eight times respectively, and in all occurrences these words were used to address a negative aspect of the homelessness experience **(Table 1, Figure 1)**. The words "scared," "afraid," and "worried" occurred 12 times, which illustrates that these individuals felt apprehensive and fearful during their experience of homelessness **(Table 1, Figure 1)**. The words "don't know" and "no idea" were used twice, illustrating that these individuals felt lost or uncertain about their next steps while homeless.

At-risk individuals also tended to associate more negative emotions with the idea of being homeless, primarily feelings of fear, with the words "scared," "worried," and "afraid" occurring a total of 17 times among the repository **(Table 1, Figure 1)**. These ideas were likely due to a fear of the unknown and uncertainty, as the words "no idea" and "don't know" were also present 11 times in the text **(Table 1, Figure 1)**. Furthermore, in the content of their emotions, the word "sad" was used three times, each time in the context of describing emotions **(Table 1, Figure 1)**. Lastly, the words "terrible" and "bad" were also used two and four times, respectively, and in all contexts to explain aspects of their experience. As for positive words, the word "appreciate" was used once, while "thankful" was used twice **(Table 1, Figure 1)**. When we studied the context of usage of these words, we discovered that whilst using "appreciate," the poster expressed gratitude for any help that the subreddit was provided, and "thankful" was used in the same situation to thank other users for their help.

Overall, in the Reddit posts of at-risk individuals, there were 3 occurrences of positive words that conveyed homelessness as an opportunity for growth, while there were 37 words negative words of fear and uncertainty. The posts of the formerly homeless revealed that there were 12 positive words whereas there were 30 negative words to relay their experience **(Table 2)**.

We also ran Fisher's Exact Test for independence on our results, to see if the variation in frequency was statistically significant. The test generated a p-value of 0.0136, which was significant at $p < 0.05$ **(Table 2)**. This test further provided that the variation in emotions observed in the at-risk and formerly homeless individuals was not due to random chance, and that this difference may be attributed to the experience of homelessness.

DISCUSSION

While it was originally hypothesized that formerly homeless individuals would view the idea of homelessness as an opportunity for self-growth, the results showed that they instead perceived the idea of homelessness with negative emotions. Negative words such as "terrible" and "sad" were present numerous times, alongside words that indicate fear such as "scared" or "worried." In comparison, positive words of gratitude were present way minimally. In the analyses for at-risk individuals, we saw words of fear (such as "scared,"

Word	Occurrence in Reddit posts of at-risk individuals	Occurrence in Reddit posts of formerly homeless people
terrible	2	7
scared	5	8
worried	6	2
no idea	3	1
don't know	8	1
bad	4	8
sad	3	3
afraid	6	2
learn	0	4
appreciate	1	0
grow	0	0
blessing	0	0
helped	0	5
thankful	2	0
opportunity	0	0
taught	0	3

Table 1: Frequencies of positively and negatively connotated words in the posts of at-risk and formerly homeless individuals. Table notes 3 occurrences of words that convey homelessness in a positive sense, and 37 of homelessness being perceived in a negative context. For the formerly homeless, the table notes 12 occurrences of the former, and 30 occurrences of words that convey homelessness in negative context of fear and sadness. Table shows the frequencies of certain words in the posts of at-risk and former homeless individuals.

"worried," or "afraid") appear more times than in the analyses for formerly homeless individuals, indicating fear and uncertainty in their experiences. Finally, a Fisher's Exact Test was run, and the variation in word frequency between the two repositories was deemed statistically significant, and not due to random sampling variability.

Although the posts were selected randomly with the help of a random number generator, the data might not represent a truly diverse group of people since the study only considered Reddit posts within the year. A more extensive set of data generated from varying social media sites such as Quora and Twitter might help eliminate this source of error. Nonetheless, these results propose the need for support and assistance even after the experience of homelessness in order to help individuals effectively deal with pent-up emotions and mitigate adverse health effects due to the same. Future researchers might also explore the relation between perception and personal characteristics such as age and gender. Unfortunately, Reddit authors are anonymous, and thus their gender and age are not publicly available. Researchers can instead use different social media sites to further analyze the perception of homelessness in at-risk and formerly homeless
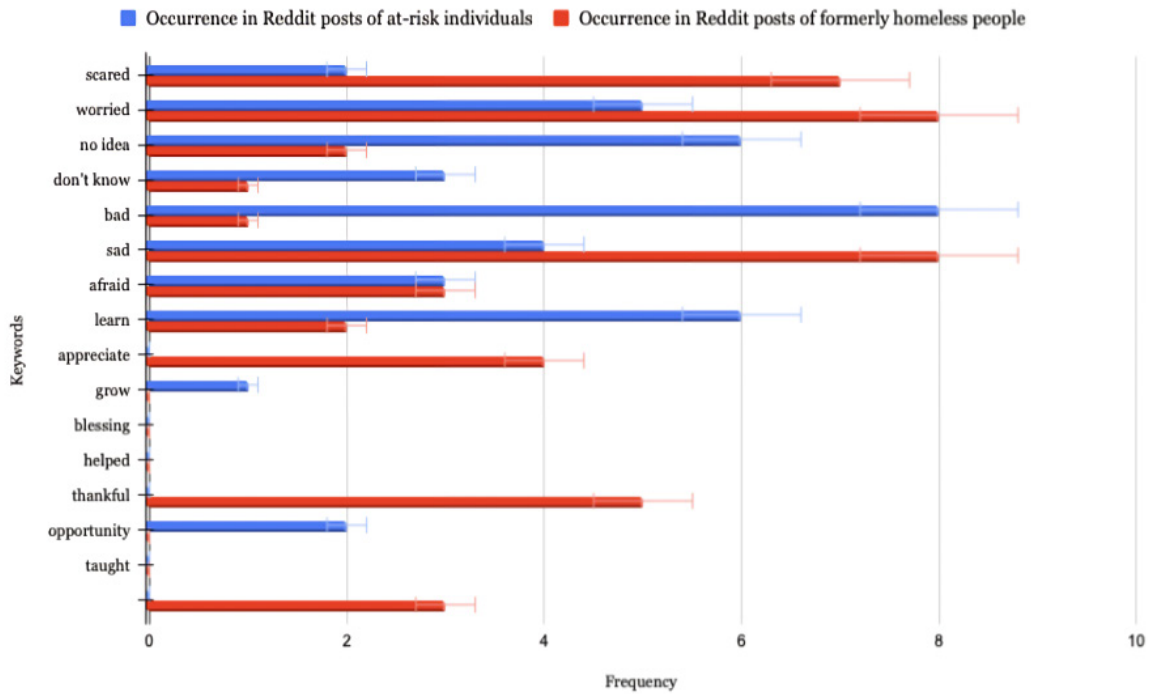
Figure 1: Formerly homeless individuals viewed the idea of homelessness in a negative context, as shown by the occurrences of negative words and few words, while at-risk individuals viewed it in a context of apprehension and uncertainty for their future. Bar chart shows occurrences of positive and negative words in the Reddit posts of at-risk and formerly homeless individuals. The frequencies of randomly selected posts were analyzed using the RegExr tool. Error bars represent Standard Deviation.

individuals.

It is also important to note that when we searched Reddit with the queries, only posts relevant to the topic appear, rather than comments that might include the search query; the comments may provide additional insight, but we were unable to analyze them due to constraints with the platform. Additionally, the RegExr tool we utilized for the analysis was limited in the sense that it could not necessarily relay the context in which the words were used.

Researchers in the future can consider expanding search queries to include more related ones such as "on the verge of homelessness" to get a larger breadth of data. Additionally, while we did this study to analyze the perceptions of homelessness in the United States, certain posts we utilized

	Occurrence in Reddit posts of at-risk individuals	Occurrence in Reddit posts of formerly homeless individuals	Total
Words that convey homelessness as an opportunity for growth/ life lesson (appreciate, helped, learn, blessing, thankful, grow, opportunity, taught)	3 (7.32) [2.55]	12 (7.68) [2.43]	15
Words of fear/anxiety, an overall negative connotation (sad, scared, bad, don't know, worried, no idea, terrible, afraid)	37 (32.68) [0.57]	30 (34.32) [0.54]	67
Total	40	42	**82**

The chi-squared statistic is 6.0862. The p-value is 0.1362. The result is significant at $p < 0.05$.

Table 2: Fisher's Exact Test of Independence carried out on frequency data for positively and negatively connoted words from the posts of at-risk vs formerly homeless individuals. Table shows occurrences of selected keywords in posts of both at-risk and formerly homeless individuals. The frequencies were calculated using the RegExr tool and by complying a repository of randomly selected posts from both audiences. The Fisher's Exact Test of Independence shows that the variation in the frequencies of the keywords is statistically significant with a p-value of 0.1362. The numbers in the parentheses are the expected counts of the values, while the bracketed values are the chi-squared statistic for each box.

could have been from international audiences, as there is no way to filter posts by location on Reddit. This study was also purely observational, as we did not impose a treatment or a control. Thus, our study can only conclude correlation, not causation. Researchers are encouraged to administer qualitative interviews with at-risk and formerly homeless individuals to observe how the experience of homelessness affects individuals psychologically.

Finally, we used subreddits specifically relating to the experience of homelessness; researchers can also consider using other subreddits that do not necessarily relate to the experience but may still help gather data. Some examples are r/frugal, a subreddit where people talk of how to survive on small sums of money, and r/finances, where people talk about money matters. One could also consider r/lifeprotips, a subreddit for people trying to improve their lives, to see if individuals were trying to combat homelessness. As for our analysis, the r/homeless channel was the most active, with multiple posts coming in each day, whereas channels like r/vagabond and r/homelessness were less active. This higher activity may have caused more of our text repository to be from the former due to the larger number of relevant posts. It is important to consider that this may impact the reliability of the results and data generated and whether the study can be used to generalize results.

Ultimately, our results highlight that formerly homeless individuals viewed the idea of homelessness in a negative context, as shown by the occurrences of negative words and a few words connotating fear. Additionally, we also found that at-risk individuals associated primarily feelings of fear with the experience of homelessness, and indicated uncertainty for their future. Our goal through this research is to help guide the development of resources for at-risk individuals, as they indicated feeling apprehensive regarding their future and nexts steps. Furthermore, we hope that policy makers and social workers consider our findings on formerly homeless individuals and work to create effective transitive resources to support them as they combat homelessness.

MATERIALS AND METHODS

The frequency of the keywords in the at-risk population were analyzed in the subreddits r/almosthomeless, r/homelessness, r/homeless, and r/homelesssurvival in a progressive manner (10–13). First, all subreddits were restricted with the 'Past Year' criteria to keep the experience of at-risk people relevant to the current situation. The subreddit was searched on January 8, 2022, therefore the applicable posts were made between January 8, 2021 and 2022. To prevent a certain user from skewing results through multiple posts on the same topic, the HideDupes feature on Reddit was used, which eliminated multiple posts by the same user.

Then, the channel was searched with certain key phrases to elicit relevant posts. For example, the phrases "about to be homeless", "almost homeless", "getting evicted", "will be homeless", "nowhere to stay", and "going to be homeless" were searched in each of the subreddits to filter posts with the same words, in any order, in the title of the post. Reddit's filtering algorithm shows posts even if a word interrupts the sequence. For example, if the title said, "I will be literally homeless," the post would still be counted for analysis.

All relevant posts that included search phrases from all

four subreddits were pasted into a Google Document and numbered. Next, a random number generator, using the TI-84's RandInt(), function was used to generate a number from 1 to the number of posts by entering in RandInt(1, number of posts, 1). The post number was then accessed based upon the random number generated by the calculator to eliminate possible bias. The selected post was copied into a separate Google document. The process was followed until the cumulative word count for the repository was approximately 2500 words (2586 in this case).

To generate the word bank for the experiences of formerly homeless people, the same process was followed, but different subreddits were used that were more apt for the query and different search phrases to elicit relevant posts. The r/homelessness, r/homeless, r/homelesssurvival, and r/vagabond subreddits were accessed (11–14). The phrases used were "former homeless experience", "formerly homeless", "I used to be homeless", "my experience as a homeless person", and "I was homeless". The previously outlined process was implemented until the text repository neared 2500 words. The word count for this document was 2518 words.

A random number generator was used to sample approximately 10% of the post population to net representative results without introducing bias. In particular, we implemented this method to prevent experimenter bias, the tendency for the researcher to pick certain results. Therefore, posts were randomly chosen to avoid subconsciously gravitating towards more extreme posts in support of our hypothesis. The number 2500 was decided upon as the word count for each population to make the entire sample (around 5000 words) approximately 10% of the entire word count. All relevant posts from all eight subreddits were added to a document, and the word count added up to 50,833 words. Thus, around 2500 words were used from each population to garner an accurate representation of the population.

Also, word count was preferred over the number of posts to control the size of samples as statistically, the size of sample is more important than the proportion it represents when trying to gauge trends in populations (9).

The RegExr tool, an independent platform used to build and test regular expressions, was then used to analyze the frequency of each of the words within the given text repository. First the posts of the at-risk individuals were entered into the tool. The tool was then searched one-by-one for each of the keywords (Table 1) using the formula /(word)+/g. This algorithm was able to search for variations of certain words; for example, occurrences of the words "helpfully," "helping," "helped" etc. would also be counted if the keyword "helpful" was searched. There were 16 words picked in total including 8 words that viewed the homelessness experience negatively, and 8 that viewed the experience in a negative context. The words "terrible," "sad," "scared," "bad," "worried," "don't know," "no idea," and "afraid" were used to illustrate emotions of fear and anxiety/uncertainty. The words "scared," "worried," and "afraid" were picked as we had hypothesized that at-risk people would experience fear. In the future, researchers can consider using further synonyms such as "anxious" or "nervous" as well. The words "terrible" and "bad" were picked as they are common ways to describe bad situations and bad feelings, which is fitting in the context of homelessness. The word "sad" was used as it is often experienced alongside fear,

according to psychologists (7). Finally, the words "don't know" and "no idea" were used to indicate uncertainty and a feeling of ambivalence regarding their future situation. The words "grow," "blessing," "appreciate," "learn," "helpful," "thankful," "opportunity," and "taught" were used to demonstrate self-growth and homelessness as an opportunity to learn. "Blessing," "appreciate," "helpful," and "thankful" were chosen as they are used commonly in daily life to highlight gratitude towards an event. Similarly, the word "grateful" might also be used in the future by researchers. The word "grow" was picked because we hypothesized that homelessness would be viewed positively as it might have helped an individual grow or develop in some aspect; "learn" and "taught" was also used for the same reason. Finally, "opportunity" was used because it is typically used in a positive context to indicate that a certain event helped inflict positive change, which was what we had hypothesized. After inputting the following words into the algorithm, the match number, or the frequency, listed on the top right of the tool was noted down in the table.

The process was repeated after replacing the text with posts from the formerly homeless and the same 16 keywords were searched. After the frequencies of all words were noted down in Table 1, they were then also compiled together into Table 2, which divided them into two groups of positive vs. negative. Finally, the Fisher's Exact Test calculator was used to generate a statistical analysis to help interpret our results (15).

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