Marketing Channel Effectiveness of New Medications/Medical Technology

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Introduction

Overview

In a United States population study from 2017, the Center for Disease Control reported that 152,753,300 people (approx 46.9%) took at least one prescription medication within the last 30 days. 69,374,100 people (approx 21.3%) took 3 or more medications, and 35,501,300 people (approx 10.9%) took 5 or more medications (CDC, 2017). I am one of those people in the 3 or more group as I deal with Type 1 Diabetes, Hypothyroidism, Hypertension, and Anxiety. Many people around the United States have some kind of illness or disease that requires the use of daily medication or the everyday use of medical devices, like an insulin pump.

When patients are first diagnosed with these illnesses/diseases, they usually opt to follow the doctor's advice for what treatment plan they should follow. This treatment plan may be satisfactory for the patient for the duration of the illness/disease, but due to the influence of Direct to Consumer (DTC) advertising of pharmaceuticals and the constant development of new medications and medical technology, patients may go into the doctor more often with new treatments for themselves in mind. Ultimately, the decision to prescribe a specific treatment plan to a patient lies in the hands of the doctors, but this does not mean that they will completely dismiss their patients wants and needs.

This study was designed with four goals in mind: (1) To draw up a general list of channels through which consumers hear about new medications/medical technology. (2) Understand the following steps taken by consumers after hearing about said medications. (3) Analyze the likelihood of bringing up the new knowledge in conversations with doctors

depending on which channel. (4) Learn how marketing platforms get the attention of their consumers in a general context.

Experience

My diabetes treatment plan has changed much within the five years I have had the disease. I started on daily shots of insulin through insulin pens and checking my blood glucose levels 8-10 times a day, usually more. Now, I am on a different brand of insulin, which I now use within an insulin pump that I change every three days, and check my blood glucose levels through a 14-day machine on my body and an app on my phone. The decision to change to these different diabetes management products was partly through seeing advertisements online, going to diabetes expos, and talking to my doctor. Coming up on my four-year mark on my insulin pump use, I am now out of contract on my pump, and I can choose to change to a different kind on the market. Though I am not going to, this research and freedom to look around/shop lead me to this research study.

Direct to Consumer Advertising

DTC is defined as an effort (usually via popular media) made by a pharmaceutical company to promote its prescription products directly to patients. Only the United States and New Zealand allow DTC advertising that includes claims about the product, so there is little to no research about DTC advertising outside of these two countries (Abel, Penson, Joffe, et al., 2006). By this definition, any advertisements done within the marketing channels I plan to research are channels for DTC advertising. Since 1997, DTC advertising spending levels have increased from $2.1 billion annually to $9.6 billion in 2016 (Schwartz & Woloshin, 2019).

There have been numerous critics of DTC advertising, claiming that it leads to high rates of overprescribing, but others counter by saying that it helps fix the underuse of treatments, especially the underuse of treatments for illnesses that may be stigmatized or poorly researched (Kravitz et al., 2005). A study from 2002 found that 71% of family physicians surveyed believed that DTC advertising pressures physicians into prescribing drugs that they would not ordinarily prescribe. The same study found that while many patients (about 25 percent of those surveyed) have initiated conversations with their doctors about a drug they saw on television, only a few of those people (less than 6 percent), actually received a prescription for the advertised drug after being prompted by DTC advertising, (Rosenthal, Berndt, Donohue, Frank, & Epstein, 2002).

This data suggests that DTC advertising may have a moderate effect on the market. These constant reminders in the consumers' face may be leading to more medication requests by the patient, so the effect of DTC advertising in traditional marketing channels is something worth researching.

Marketing Channels Researched

For this study, I chose to focus on four different marketing channels that are considered significant channels within DTC advertising: Television, Print, Within Practice, and Online.

Television

We have all heard those drug ads on television. "Ask your doctor about (drug name)…" and "Do not start taking (drug name) if you suffer from these illnesses.." Television advertising has multiplied 9.2 times between 1997 and 2016. The number of total advertisement occurrences (not unique advertisements themselves) increased from 72,000 commercials in 1997 to 663,000

commercials in 2016 (Schwartz & Woloshin, 2019). A trial was done in 2005 to analyze the effect of television on requests for medications. Patients who had told the physician "I was watching this TV program about depression wondering if you thought a medicine might help me," compared with those who made no request, received more prescriptions for antidepressants (76% vs. 31%) and for adjustment disorder (39% vs. 10%) (Kravitz et al., 2005).

Print

Print advertising in magazines and newspapers has generally declined with the declining numbers of print publications. However, annual marketing spending of advertising prescription drugs in magazines has increased annually from about $1 billion in 1997 to $1.7 billion in 2016. Newspaper annual spending increased from 1997 to 2004, but has returned to less than 250,000 million annually in 2016 (Schwartz & Woloshin, 2019). Newspapers and magazines, as well as flyers and bulletins, were included in this study because print is one of the oldest forms of media. Those who do not use the computer or watch much television may be most susceptible to print.

Within Practice

Within practice advertising is any material or advertisement one might see within a doctor's office. It could be on a lobby television, or in a print magazine, but this is a separate channel from those two because of the proximity effect of a doctor. This marketing channel is pretty hard to report financial figures on since each office or hospital lobby has different kinds of advertisement spreads. One of the main reasons I chose to focus on within practice advertising was my history with a Chicago-based company called Outcome Health. They make products such as interactive wall boards for waiting rooms and lobby television programs that are tailored

to the office and the kinds of patients that doctors see (Outcome Health, 2019). For example, my endocrinologist has a lobby television that plays clips relating to diabetes and endocrine health. In the waiting room, patients can see an interactive wallboard showing info about the endocrine system, some common endocrine illnesses/diseases, and advertisements for medications that are commonly diagnosed by endocrinologists. This marketing platform can be used in multiple ways, not just for advertising, and it's proximity to both patient and doctor makes it very useful.

Online

The ability to search for something online has drastically changed what we do and how we experience life. Most people would not go to a new restaurant without either doing a Yelp review search of it or getting a review from a friend who went in person. If there was a fantastic new grill on sale at Menards, but someone wanted to see what other people's thoughts were on it before investing, they would probably do an online search. This concept translates into the medical field perfectly.

There are so many consumers on social media that search for relevant information and responses to questions regarding healthcare and medical needs. In fact, surveys indicate that over 60% of Americans turn first to internet searching when seeking health related information (Greene & Kesselheim, 2010). According to research from True North Custom, about 75% of healthcare brands claim they use social media to engage with audiences and distribute content (Del Gigante, 2012). A perfect example of this I have encountered is targeted advertising on social media for continuous glucose monitors. There are about three major brands on the U.S. market right now, and recently, one brand came out with a more extended wear version of their CGM (10-day vs. 14-day). They use that new feature and target me as a diabetic and as a diabetic

content searcher. On these advertisements, they can also respond to questions and comments about the product, so it is a useful channel to engage with audiences and potential patients.

Internet and Mobile advertising spending numbers were not available in 1997, but since it's creation, the spend on digital advertising has risen to about $500 million in 2016 (Schwartz & Woloshin, 2019). This number is only accounting for prescription drug advertising, but another estimate done by Statista includes all of the digital advertising spending done by the healthcare and pharma industry in the United States. This estimate says that spending has risen from $1.01 billion annually in 2011 to a projected total of $3.14 billion annually in 2019 (Statista, 2018).

There has been issues in the past with using online advertisements however. In April 2009, the Food and Drug Administration had to issue warnings to drug manufacturers who had sponsored search engine ads for prescription drugs. These warnings were caused because of the lack of an obvious connection to a statement of risk. These are all required of FDA approved manufacturers, but the FDA does not have the power to police all posts online made by manufacturers (Greene & Kesselheim, 2010). Messages about new medications on online channels have to make sure that they strictly follow FDA guidelines to avoid any backlash.

With the rise of a technologically savvy generation, online channels may be worth looking into for healthcare and pharmaceutical brands due to their massive influence on today's society.

Methods

Participants

The sample for this study was recruited from Amazon's Mechanical Turk (MTurk) system. MTurk virtually distributes surveys to participants and pays them per survey completed. The Augustana Business Department provided funding for this survey.

A total of 335 usable responses were collected and analyzed. The survey was available to participants who were: 1. over the age of 18, 2. lived within the United States, and 3. either had a chronic illness and or took daily maintenance medication. Those who did not fit this criterion, yet still did the survey, were not used in data analysis.

The average age of the participants was about 38 years old, with a majority of those surveyed (60.8%) being above age 31. 59% of the participants were female, and the majority of the participants were Caucasian. These demographics and others, such as marital status, education, employment, and annual household income, are shown in Appendix B.

Design

The survey was designed through Google Forms with eight demographic items, twelve multiple-choice items, and five Likert scale items. The Likert scale items were rated 1 (very unlikely) to 5 (very likely). The average time it took participants to complete the survey was nine minutes and twenty-four seconds

Results

Category of Illness

In order to be eligible for this survey, participants had to fall into one of the two following categories. They either (a) had a chronic illness, which is defined as a condition that usually cannot be cured completely, although it can be controlled or managed through certain medications or lifestyle changes, or (b) did not have a chronic illness, but did take a daily medication and or had a medical product that they used daily. Approximately 71.3% (239) of participants had a chronic illness, while the other 28.7% (96) took daily medication/had a daily medical product.

Medication Change

Participants were asked if they were currently taking the same medication (regardless of dosage change) or had the same treatment plan as they were first prescribed at the diagnosis of their condition. The majority of respondents were still taking the same medication as first prescribed, about 69% (231). The other 31% (104) were not taking the same medication/ had the same treatment plan, so I wanted to know more about their reasoning to change.

Of the 104 participants that changed their medication/plan, most listed the reason why they changed was that the initial treatment plan was not working effectively. The second and third most common reasons were there was a new medication/technology developed and the cost of the medication. See Appendix A, Figure 1 below for a complete list of reasons given for medication change.

Current Plan History

In order to start a new medication/treatment plan, it is likely that one will need to get a prescription from a doctor. This is how a majority of those surveyed found their current medication schedule/treatment plan - 75.5% learned from their prescriber. However, there are many other channels that those surveyed had heard through before going to their doctor. See Appendix A, Figure 2 below.

Next Step

After hearing about a new medication/treatment plan, the next step is up to the patient. A majority of those surveyed went straight to their doctor with the information, while some said they did additional research before going to their doctors. See Appendix A, Figure 3 below.

Marketing Channel Likelihoods

Participants were asked to rate on a Likert scale, 1 being highly unlikely to 5 being highly likely, their likelihood of bringing up a medication to their doctor after hearing about it from the following marketing channels: Television, Within Practice, Online, and Print.

The likelihood of mentioning a medication/medical technology first seen from a television advertisement averaged a 3.32 out of 5, (s= 1.23, n= 335). The likelihood of mentioning a mediation/medical technology first seen from a within practice advertisement averaged a 3.49 out of 5, (s= 1.34, n= 335). The likelihood of mentioning a medication/medical technology first seen from an online source (blogs, social media, company websites) averaged a 3.46 out of 5, (s= 1.18, n= 335). The likelihood of mentioning a medication/medical technology

first seen from a printed advertisement (flyer, banner, bulletin) averaged a 3.46 out of 5, (s= 1.14, n=334). A comparative graph of all scores can be seen below in Appendix A, Figure 4.

Correlations between these channels were overall high and significant. These are reported below in Appendix A, Table 1. Additionally, I wanted to see if there was going to be a difference between age groups and the likelihood of bringing up a message to their doctor from a channel. There was not a significant difference in the scores for TV, Within Practice, Online, or Print between the 30 and below age group (n= 131) and the 31 and above age group (n = 204).

Friends & Family

Conversations about health usually include the patient and the doctor, but not all the time. Family and friends may have a significant effect on how discussions about health go. When asked the likelihood of discussing a treatment plan change with friends and family, respondents averaged a 3.21 out of 5 (s= 1.28, n= 335). (See Appendix A, Figure 5 below)

There were low to moderate significant correlations between the likelihood of involving friends and family and the likelihood of mentioning a message from each of the aforementioned marketing channels. See Appendix A, Table 1 below for the correlation matrix. The highest correlation was with the Online channel. After running a t-test, I was surprised to see there was a significant difference in the likelihood to involve friends & family in medical decision scores for those 30 and below (m= 3.48, s= 1.09) and those 31 and above (m= 3.04, s= 1.38); t (311) = 3.10, p = .002.

Recent Medical Advertising

When asked if they had heard of any new medication (even if not pertaining to their condition) within the last month, a little more than half (52.5%, 176) of those surveyed said yes, they had. Of those who answered yes, they were then asked how/through what channels that they heard of these medications. Television was the most common answer, followed by online search and within practice. See Appendix A, Figure 6 below for the complete list of channels.

Follow Medical News

Only about 20.3% (68) of those surveyed said that they followed medical news regularly. This question felt important to ask because it differentiated active news seekers from passive ones. Those who were more active with their searches may have seen more advertisements or may have been more likely to mention a medication to a doctor from one of their searches.

Channel Attention

Lastly, we asked participants to list what channels would catch their attention the most, regardless of the kind of message being sent. Television was the most common listed, with friends & family coming in at a close second. See Appendix A, Figure 7 below for the complete list of channels.

Discussion

This study was designed with four goals in mind: (1) To draw up a general list of channels through which consumers hear about new medications/medical technology. (2) Understand the following steps taken by consumers after hearing about said medications. (3) Analyze the likelihood of bringing up the new knowledge in conversations with doctors depending on which channel. (4) Learn how marketing platforms get the attention of their consumers in a general context.

Likelihood Findings

The "Likelihood' findings seem to tell us that there still is a general mistrust of newer channels, like social media or any online search, but that may be changing due to the rise of a tech-savvy generation. The highest average likelihood channel was from Within practice. This most likely contributes to the proximity effect of the advertisement to the doctor. Doctors (or hospitals) choose what materials are placed within their waiting rooms, so when a patient can mention a medication to a doctor they saw from a magazine in the waiting room, the doctor should be somewhat familiar with the medication. With that information, it seems that any advertising done within a lobby or waiting room might be the most effective channel, but there are other variables at play to prevent a definitive claim like that.

While family and friends are not a channel that can have paid marketing efforts, they hold an essential influence on patients lives. According to Figure 2, friends and family was the third most common channel that respondents heard about their current treatment plan through. Figure 3 also lists asking friends and family as one of the next steps respondents took after learning

about a new treatment plan. Figure 7 shows that any message through friends and family will garner the most attention from the respondents.

The higher correlation between the likelihood of the online channel and the likelihood of involving friends and family is an interesting interaction to look into in the future. This may suggest that online advertisements done by medical marketers may benefit by making their ads more family-oriented.

The results of the T-Test are also noteworthy. Those below the age of 30 are more likely to involve friends and family in medical decisions than those ages 31 and above. This may be due to the mindset of those who are older; they may have had a lengthy history with the medication and see no need to include other people in the decision to alter it. Above the age of 31, however, it may be more beneficial to include friends and family in the discussion, as health may begin to decline in later years. Future research could benefit from a larger sample of those above the age of 50 in this regard to see if the likelihood would be altered.

Other Findings

It was interesting to have this many respondents with Chronic Illnesses (239). According to the National Health Council, a little more than 40% of the United States Population has at least one chronic illness (National Health Council, 2014). The percentage of people who had at least one chronic illness in this sample was 71.3%. This may be due to response set bias, but this is unknown. Future research might aim to have this question be more representative of the population.

Like I said previously, my treatment plan has changed pretty drastically since my first diagnosis of diabetes, but for my other maintenance medications, I have been on the same ones

since the diagnosis of those other issues. It was interesting to see all the respondents give the reasons why they changed their treatment plan. It is unfortunate that the cost of medication was one of the more frequent reasons. Almost half of the participants surveyed (that had gone through a medication change since diagnosis) listed new technology/medications being developed was one of their main reasons for changing their plan. This is good news for the drug developers, as it means that potential patients and doctors are receptive to new medicines being put on the market.

In the 'Next Step' findings, many respondents did additional research rather than just going straight to the doctor with their new information. This is good for the marketers of the products because it means that online presence and information being put out there is being read and used, not just overlooked. The channel flow is not just “a message to the potential patient to the doctor” anymore. Other people and platforms are included in the consideration of the product.

Television continues to be a persevering medium through which medical news and information is shared. A little more than 53% of those who had seen a medical advertisement within the last 30 days had seen one through television programming. This would be worthy of studying more into in the future with the rise of streaming services like Netflix and Hulu. Many people do not watch network television anymore, especially those in early adulthood, so the influence of medical marketing may not be hitting them as frequently as marketers may like.

Limitations

There are a few limitations to this study that may have impacted data collection and analysis. This study was founded on a personal research question and bias toward the marketing and medical communities. Due to the timeframe of data collection and analysis being a little under twelve weeks, the channels that were looked into more deeply and asked about were few in number. Since this study was done mainly with a paid survey, there may be a higher likelihood of response sets just to receive payment. The survey also may have been done with sample bias because the people recruited were already avid internet users, so this may have inflated their scores on items involving any online responses.

There was no collection of actual company data on marketing expenditures, only estimations from sources found. Marketing itself is such a broad term, and many kinds of expenses can be fit under it for budgeting reasons. These other expenses could include, but are not limited to; marketing employee salaries, marketing, and population research budgets, analytical tools for measuring returns on investments, any payments made to advertising agencies and public relations firms, and even lobbying and campaign contributions.

Conclusion

The marketing channels used for new medication/medical technology advertising will always be changing and evolving. This study found that there are numerous channels and paths people learn from and go through to get to the result of being prescribed and using that new medication/technology. With new medication releases happening often and the increasing use of technology in the medical field, it is vital to understand how to correctly and efficiently use these marketing channels to spread information and promote these new medical developments.

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Appendix A

Table 1
Channel Comparisons

Channel	TV	WP	Online	Print	F&F
TV	1				
WP	.707**	1			
Online	.684**	.576**	1		
Print	.672**	.697**	.625**	1	
F&F	.396**	.318**	.415**	.356**	1

**p<.01

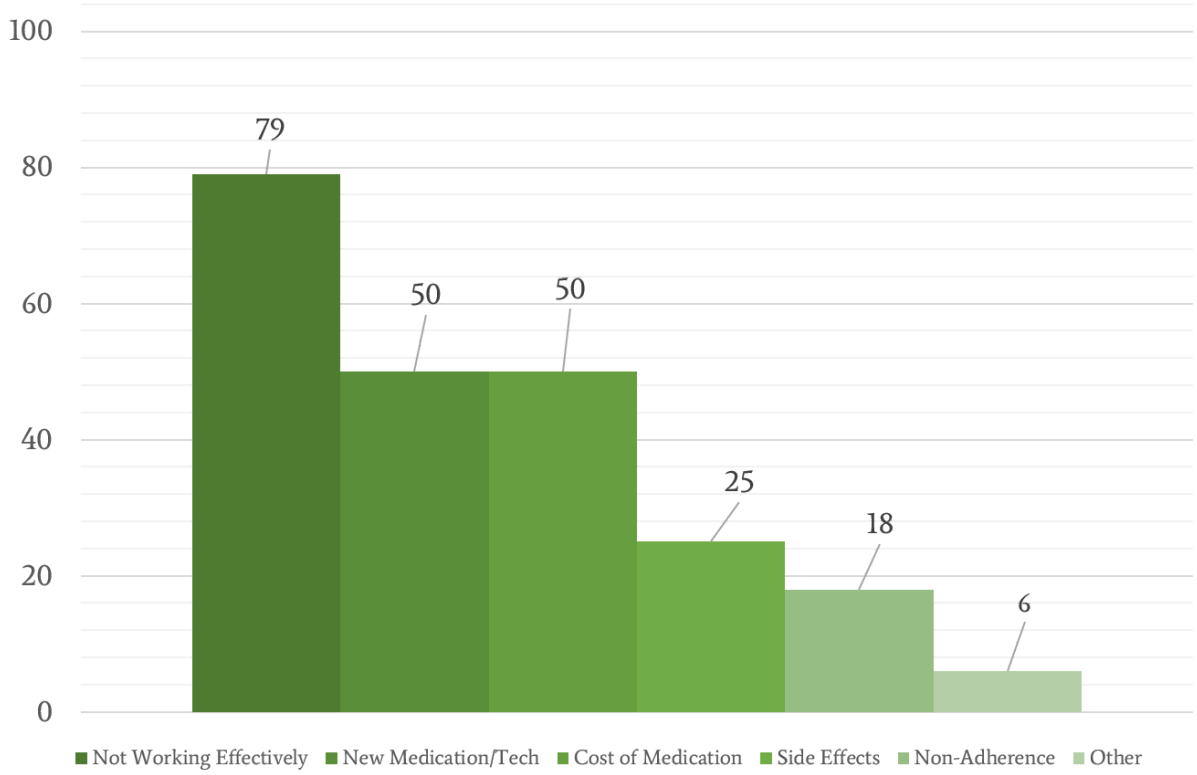


Figure 1. Why there was a medication/treatment plan change. Note: Numbers do not add up to 100 due to participants citing multiple reasons.

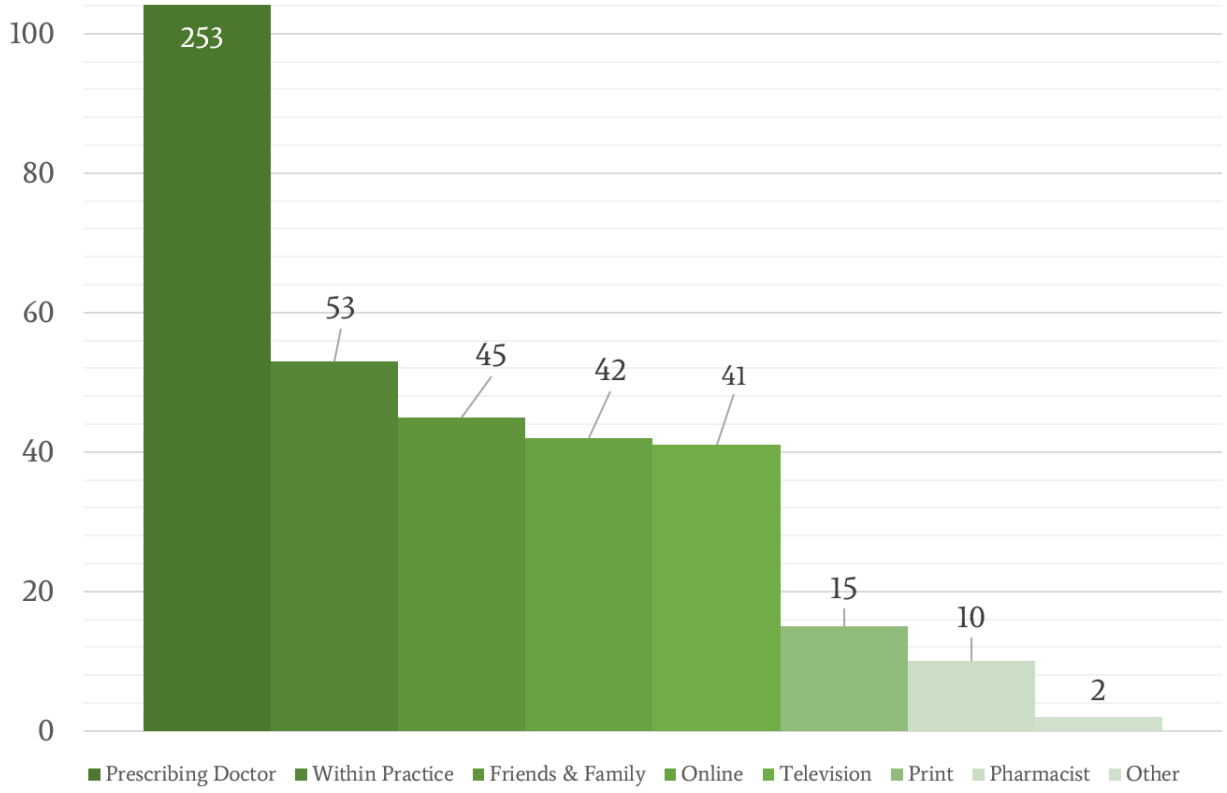


Figure 2. How current treatment plan was heard about. Note: Numbers do not add up to 100 due to participants citing multiple reasons.

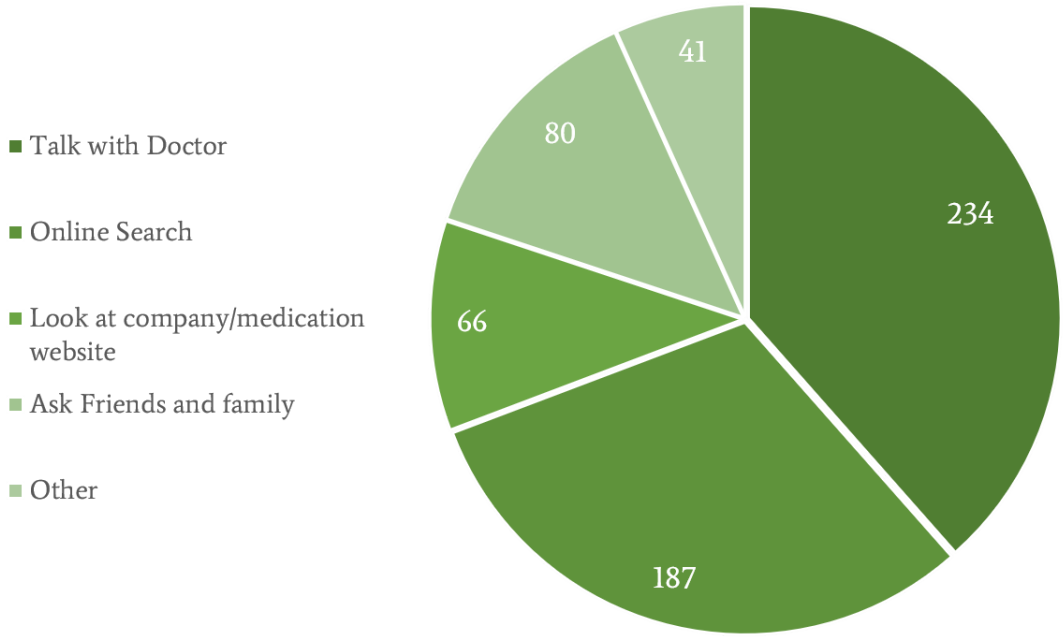


Figure 3. Next step after finding out about a new medication. Note: Numbers do not add up to 100 due to participants citing multiple reasons.

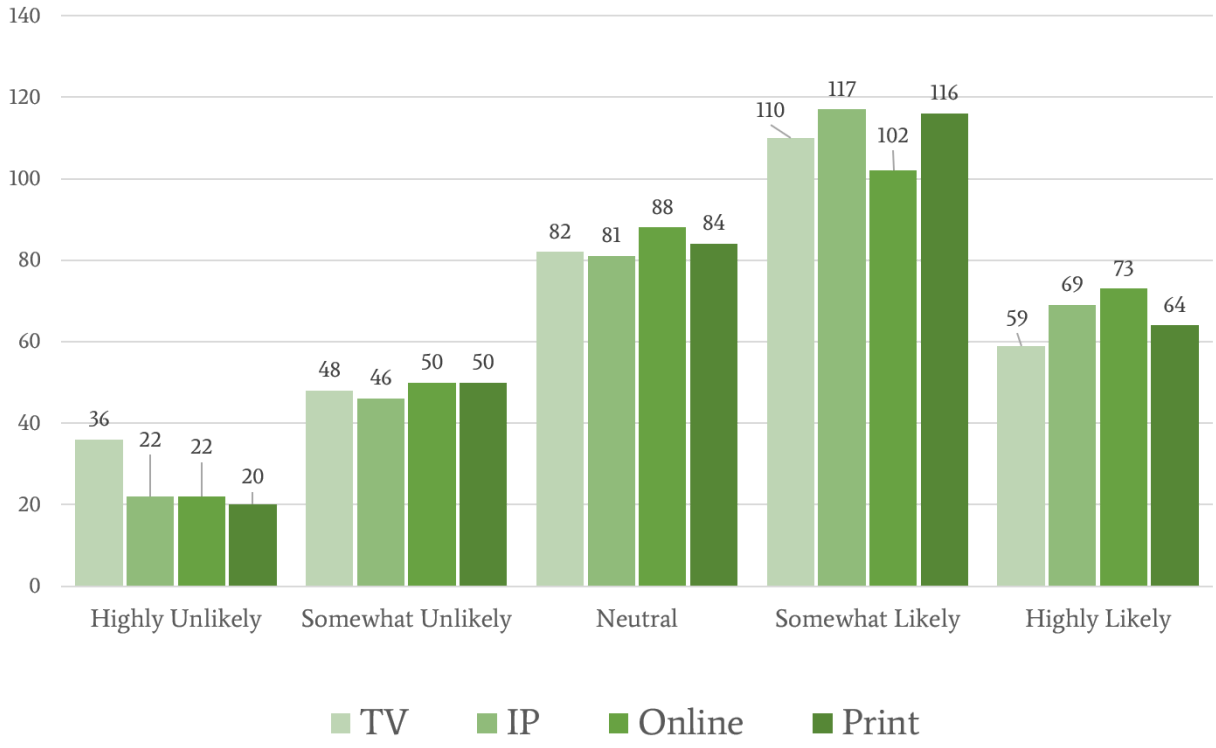


Figure 4. Likelihood of bringing mentioning medication/medical technology to doctor after seeing on marketing channels.

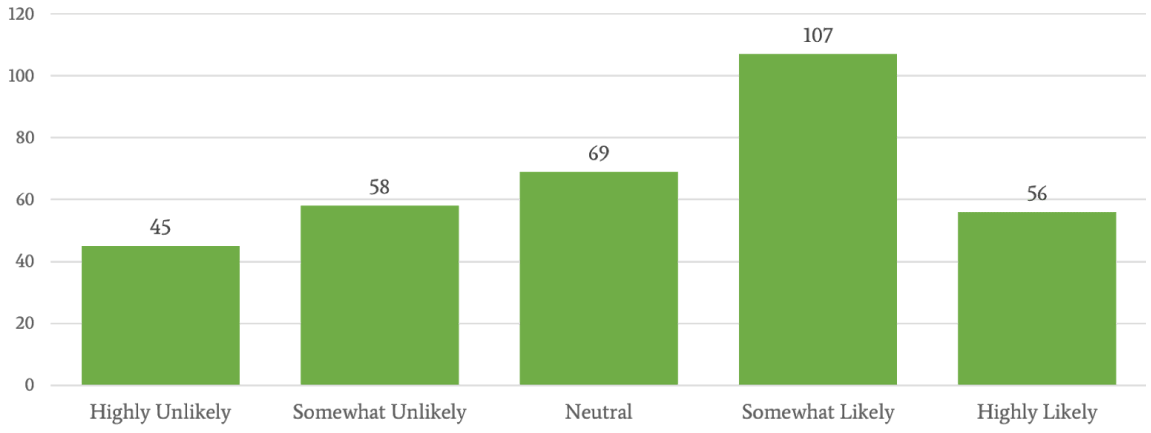


Figure 5. Likelihood of involving friends and family in medical decisions.

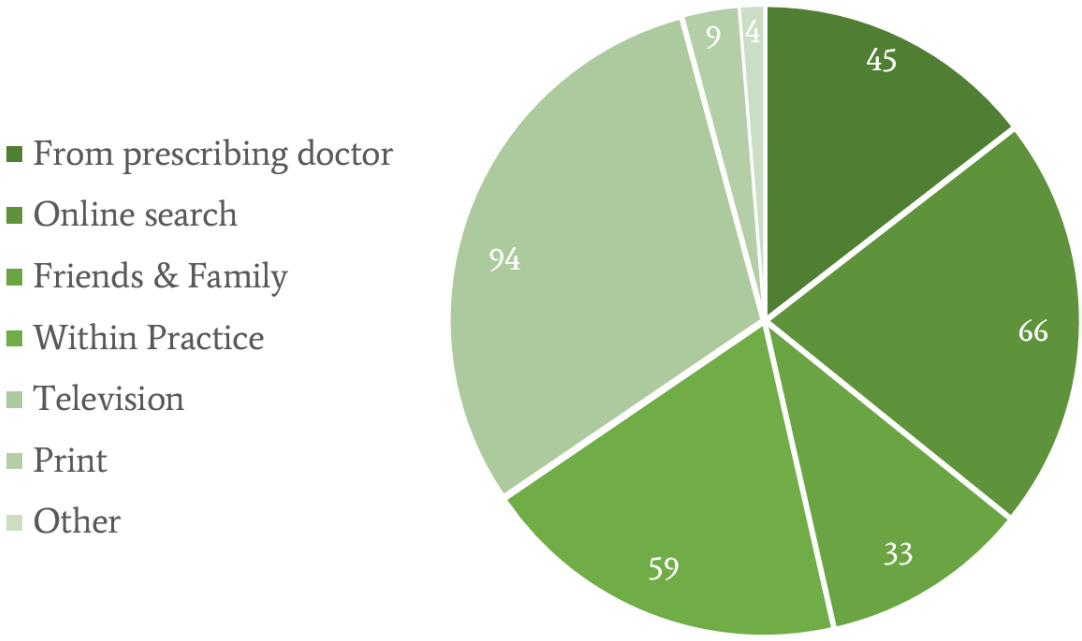


Figure 6. Channels through which participants heard of new medications/medical tech within the last 30 days. Note: Numbers do not add up to 100 due to participants citing multiple reasons.

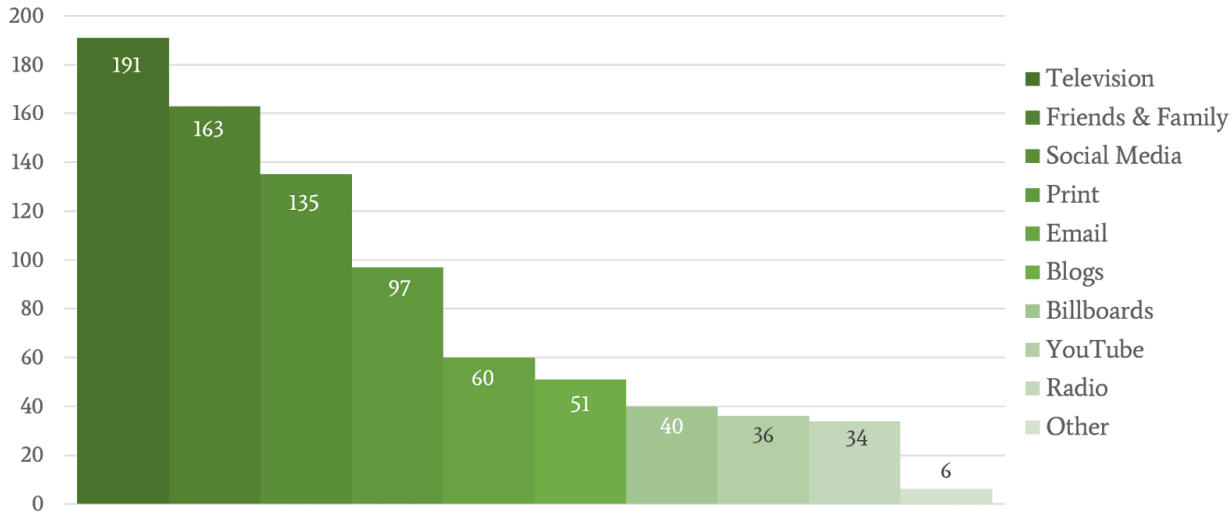
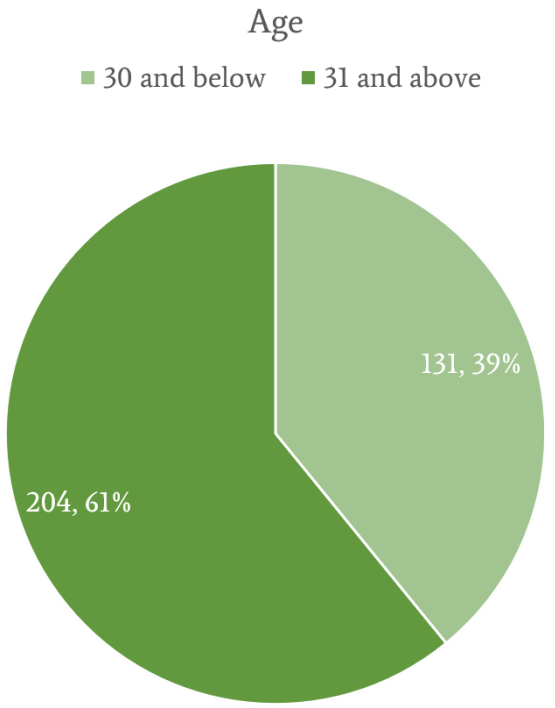
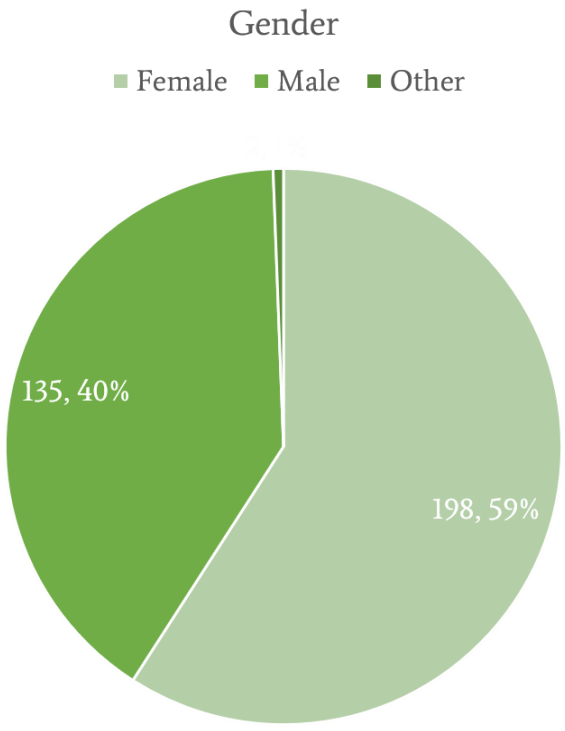
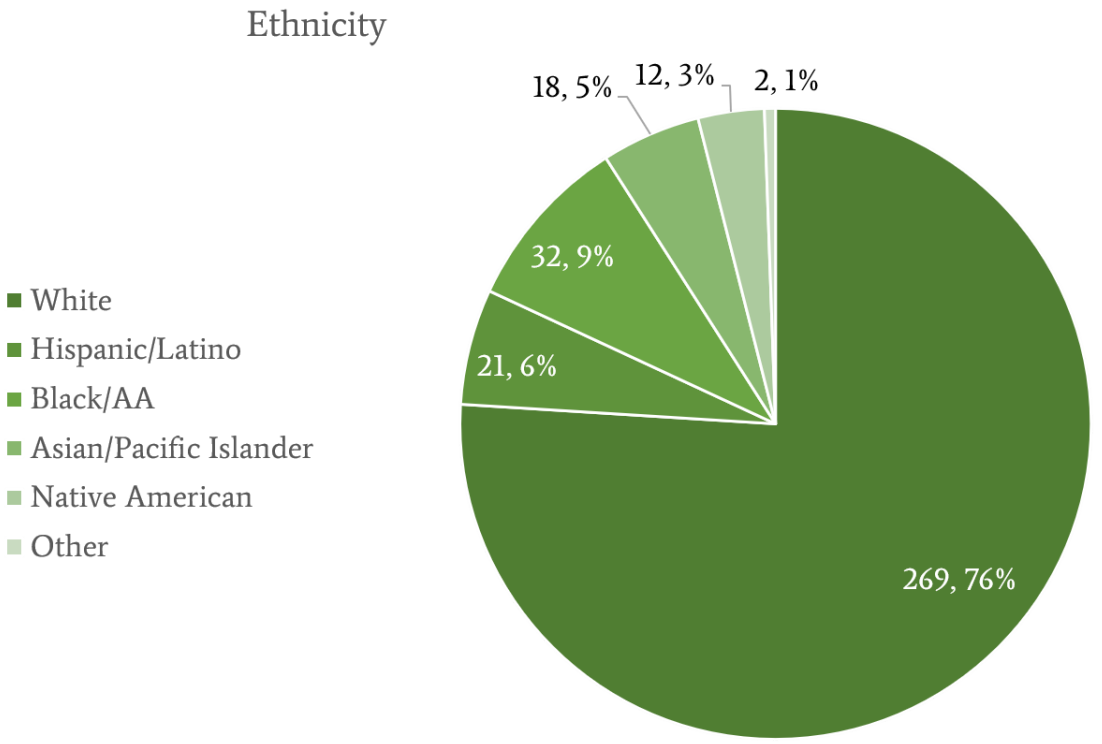


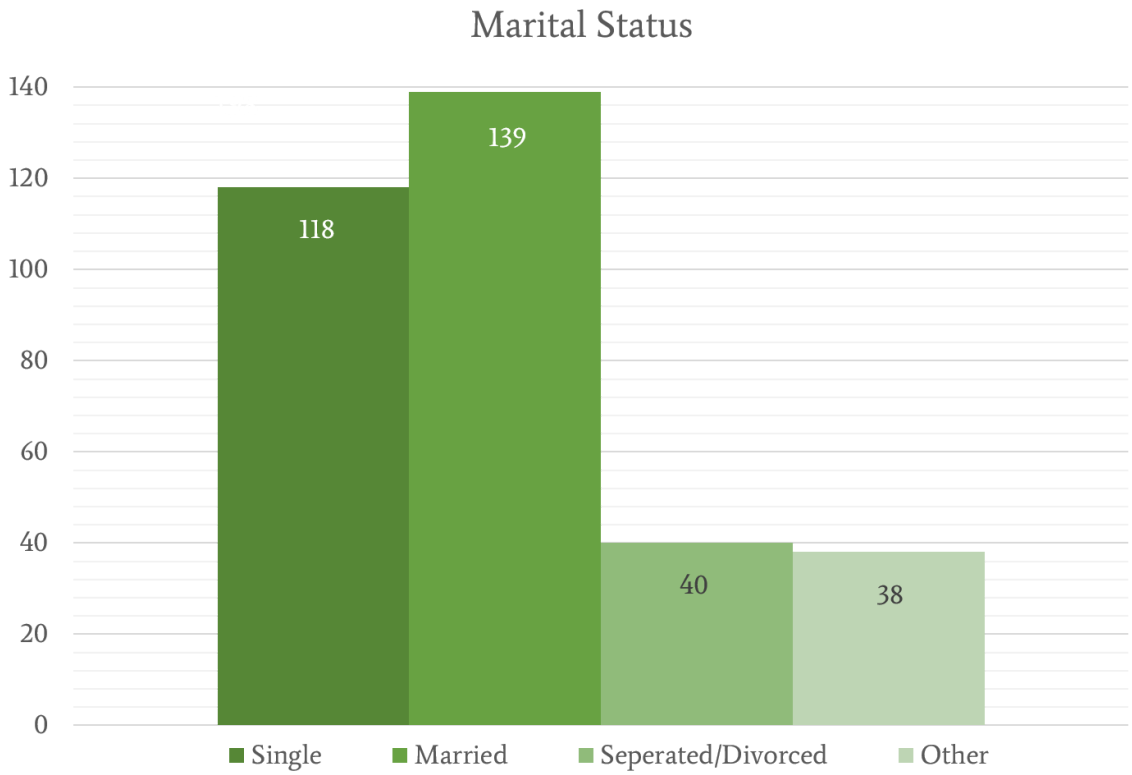
Figure 7. Marketing Channels that gather the most attention. Note: Numbers do not add up to 100 due to participants citing multiple reasons.

Appendix B


Age
30 and below
31 and above
131, 39%
204, 61%


Gender
Female
Male
Other
135, 40%
198, 59%


Ethnicity
White
Hispanic/Latino
Black/AA
Asian/Pacific Islander
Native American
Other
269, 76%
21, 6%
32, 9%
18, 5%
12, 3%
2, 1%


Marital Status
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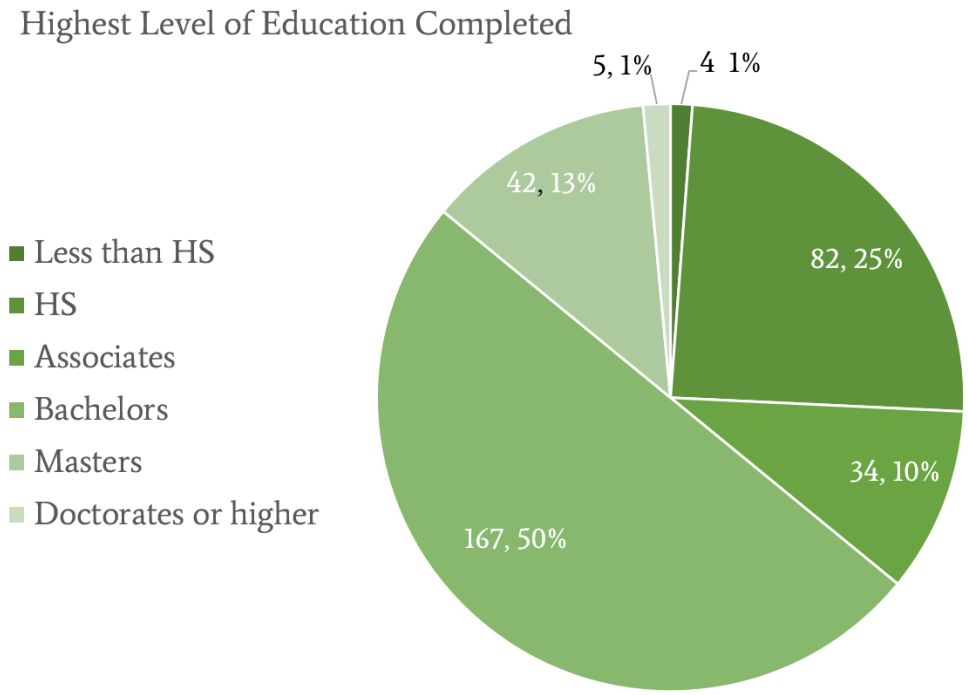
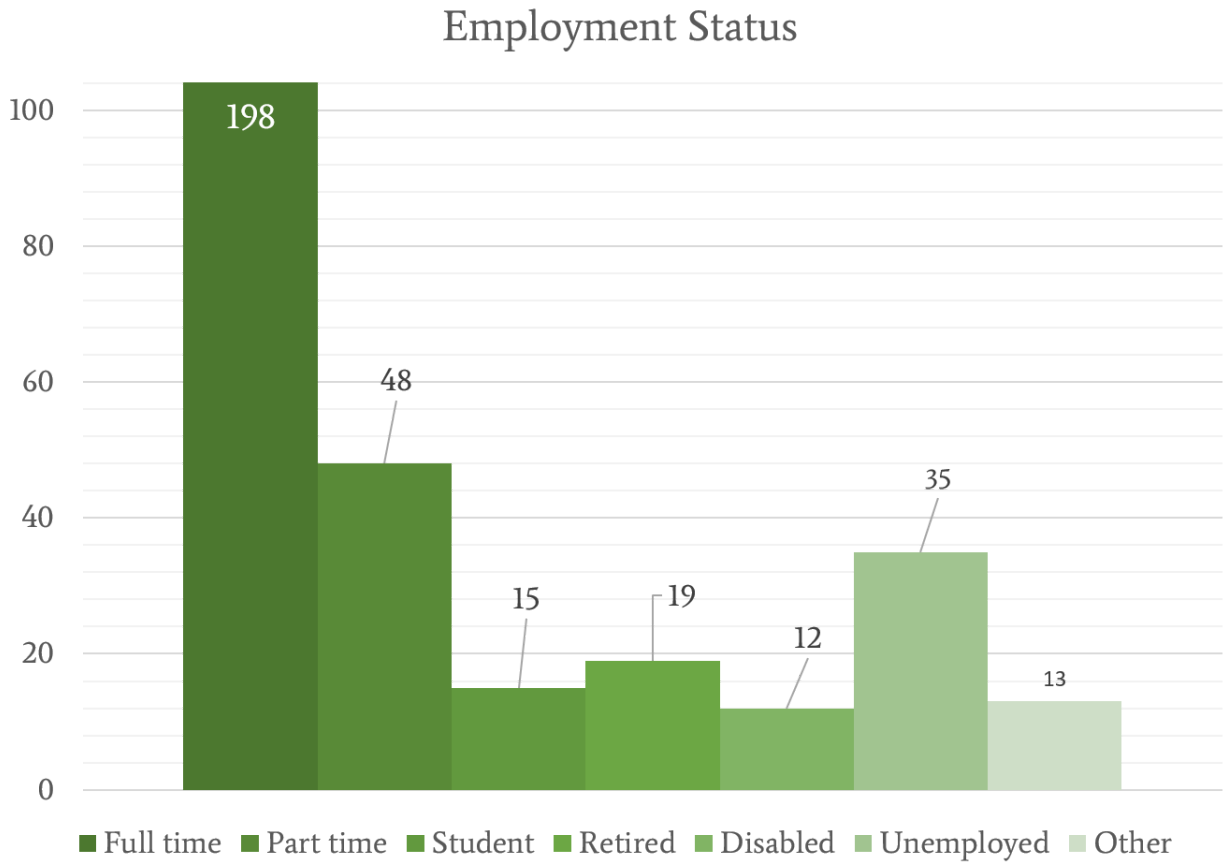
120
100
80
60
40
20
0
118
139
40
38
Single
Married
Seperated/Divorced
Other


Highest Level of Education Completed
Less than HS
HS
Associates
Bachelors
Masters
Doctorates or higher
5, 1%
4 1%
42, 13%
82, 25%
34, 10%
167, 50%


Employment Status
100
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12
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13
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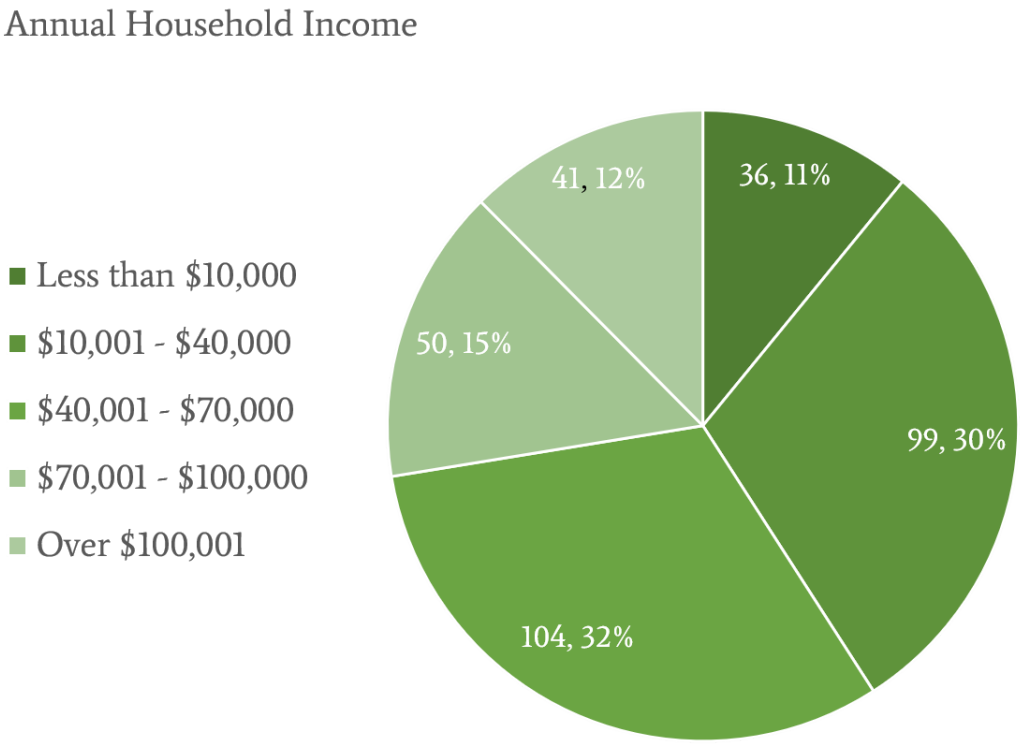
Part time
Student
Retired
Disabled
Unemployed
Other


Annual Household Income
Less than $10,000
$10,001 - $40,000
$40,001 - $70,000
$70,001 - $100,000
Over $100,001
36, 11%
99, 30%
104, 32%
50, 15%
41, 12%