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# Young adult perspectives on the selection of pharmaceuticals for mental health treatment

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# Young adult perspectives on the selection of pharmaceuticals for mental health treatment

## **Cover Page Footnote**

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## Young adult perspectives on the selection of pharmaceuticals for mental health treatment

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### Abstract

Shared decision making places an emphasis on patient understanding and engagement. However, when it comes to treatment selection, research tends to focus on how doctors select pharmaceutical treatments. The current study is a qualitative assessment of how patients choose among three common treatments that have varying degrees of scientific support and side effects. We used qualitative data from 157 undergraduates (44 males, 113 females; mean age = 21.89 years) that was collected as part of a larger correlational study of depression and critical thinking skills. Qualitative analysis revealed three major themes: shared versus independent decision making, confidence in the research and the drug, and cost and availability. Some participants preferred to rely on informal networks such as consumer testimonials while others expressed a false sense of security for over-the-counter treatments because they believe the drugs are regulated. Many indicated that they avoid seeking mental health services because of the time and money needed. The results indicate several factors influence selection of common depression treatments. Young adults indicate that when reading prescription information, they most often rely on perceptions including ease of access, price, and beliefs about drug regulations. General guidelines for treatment descriptions were created based on the qualitative analysis.

### Keywords

Patient experience, qualitative methods, patient engagement, communication, patient decision making

### Introduction

Over 60 million US residents search for health information online to inform their medical decisions, with more than 70% of them influenced by that information<sup>1</sup>. Moreover, 1 in every 3 who accesses the internet for health information will self-diagnose without ever seeing a medical professional.<sup>1</sup> As more people use the internet each year to locate and self-diagnose health problems,<sup>2</sup> it is important to determine what information in treatment descriptions is considered important and how that information is interpreted by the consumers.

Online treatment descriptions vary widely based on the type of webpage that is marketing the treatment information.<sup>3</sup> For example, a webpage dedicated to health information will tend to provide general materials related to maintaining a healthy lifestyle, or contain information related to treating a specific condition.<sup>3</sup> In many cases, the information found online is inaccurate or incomplete, with some studies noting over 75% of the webpages that marketed health information were incorrect.<sup>3,4,5</sup> Hansell and colleagues<sup>2</sup> determined that websites focused on addressing mental health problems provided theoretically biased information about the treatments available. Despite

the widespread misinformation, health-oriented websites have been shown to facilitate help-seeking behaviors.<sup>3,2</sup>

Although research suggests that using health websites increases help-seeking behaviors, little is known about how the treatment information found on these websites affects utilization and compliance to treatment schedules, especially among young adults. More broadly speaking, there is little research addressing young adults' general perspectives of treatment descriptions for mental health pharmaceutical drugs.<sup>6</sup> Thus, the primary purpose of the current study is to determine what respondents perceive is the most salient and important information presented within mental health treatment descriptions and how that influences their treatment selection. The results of this research will help inform how to display medication information to young adult consumers to encourage utilization of efficacious mental health treatments when needed.

### *Treatment Selection in the Health Decision Making Process*

There are numerous factors that influence a person's treatment selection in the health decision making process. Jorm and colleagues<sup>7</sup> suggest that the public often bases its

opinions of treatments on general belief systems, which are not typically supported by empirical research. For example, some people believe that professional mental health services are worse than getting no help for mental issues.<sup>7</sup> Others seek out informal networks of family and friends for information regarding health choices.<sup>7</sup> In these cases, people are relying on the personal experience of known individuals to aid their decision process instead of deferring to a potential stranger (e.g., a doctor). Since these referrals are generally rated more positively than referrals from medical professionals,<sup>7</sup> they can influence whether a person utilizes empirically supported treatment versus a pseudotreatment. It is thought that this reliance on an informal network instead of medical professional's opinion could be part of the reason that fad treatments have seen a rise in popularity and are a highly sought-after treatment option.<sup>8</sup>

The acai berry is one such fad treatment, or pseudotreatment, that is marketed for a variety of health-related issues, including mental health problems.<sup>9</sup> The popularity of this drug could be due to promotional websites that includes information about how this berry is used to treat a wide range of ailments including high blood pressure and weight loss.<sup>9,10</sup> Likewise, natural health stores tend to carry acai berry supplements because of other putative health benefits, such as reducing cancer risk, improving depression symptoms, and increasing sexual performance.<sup>11</sup> While such information has broad appeal, there is very little research to support these purported health benefits.

These natural remedies are highly sought after, particularly by young adults who are often consumers of alternative medicines.<sup>12</sup> How young adults choose among treatment options is of particular interest because 18-25 years of age is considered a critical time to develop healthy personal care habits, including both physical and mental care.<sup>13</sup> These young adults are not only at risk of suffering from poor mental health, but are also at risk of developing poor health decision making skills, which could have lifelong implications.

To help young adults make better health decisions based on information obtained online or through informal networks, we sought to identify the components of treatment information that are perceived as most salient and influential. Determining how young adults view treatment information can provide insight for modelling future treatment descriptions increase young adults' selection of efficacious mental health treatments over pseudotreatments.

## Method

This study was conducted at a mid-sized, urban state university as part of a large mental health treatment

selection survey that utilized mixed methodology. The relationship between critical thinking skills and mental health treatment selection was evaluated using quantitative methods, which is reported elsewhere.<sup>14</sup> Qualitative data (reported in the current article) allowed the opportunity for analyzing participants' rationales for selecting one drug description over two other drug descriptions. Table 1 includes the three treatment descriptions based on Selective Serotonin Reuptake Inhibitors (SSRIs), St. Johns Wort, or acai berries that were provided to each participant. Each description was segmented into five sentences and masked as Drug A, B, or C for a "general mental health issue" to avoid any bias that could have been introduced by providing the real drug name. The order in which sentences were presented was randomized for each participant.

Each sentence within the drug description was designed to relate to one of five specific critical thinking domains.<sup>14</sup> The statements included structural keywords that were used as the basis for the qualitative analysis discussed in the current article. Participants were shown three statements at a time, one from each drug description. After selecting the statement, they preferred, participants were asked to provide their rationale for the selection in an open-ended comment box. This was repeated until all five individual selections were made and comments were provided.

After individual selections were finished, the complete treatment descriptions were provided. The first full description was shown to participants using masked names, presented as Drug A, B, and C. To determine if participants would change their selection based on name recognition, the second full description included the actual treatment names (SSRIs, St. Johns Wort, and acai berries). Again, for each of these presentations, participants selected which drug they preferred and provided their rationale. The selection and comment process resulted in seven distinct comments maximum per participant, which range from no response provided to full paragraphs of text. By asking for participants' opinions on each of the five statements, as well as the overall statements, we were able to analyze what information was most salient during the selection process.

## Participants

In total, a random sample of 157 undergraduates from a wide range of academic majors (44 males, 113 females) ranging from 18- to 66-years-old ( $M = 21.89$  years,  $median = 19$  years,  $SD = 7.382$  years) were eligible and completed all study requirements. The ethnic demographics were diverse and representative of the overall student population at the university: 64% of the sample indicated they identified as White, 13% Black, 5% Hispanic, and 19% identified as some other ethnicity. Therefore, the results could be generalizable to the student population

Table 1. Treatment descriptions statements and structural keywords

Structural Codes	Drug A	Drug B	Drug C
* Symptom Reduction * Side Effects	In some people, symptoms are reduced but there are a few reported side effects associated with taking this drug.	In most people, symptom reduction is unknown but there are no known side effects from taking this drug.	In most people, symptoms are reduced but there are several reported side effects associated with taking this drug.
* Positive Measurable Results *Percent	Research indicates 49-57% of people have positive measurable results from using this drug.	No research has been conducted to determine if people have positive measurable results from using this drug.	Research indicates 53-64% of people have positive measurable results from using this drug.
* Target * Neurotransmitters	There is limited evidence that shows this drug targets specific neurotransmitters in the brain.	There is no evidence that shows this drug targets specific neurotransmitters in the brain.	There is evidence that shows this drug targets specific neurotransmitters in the brain.
* Access * Prescription *Recommendation * Doctor	This drug is available over the counter and without prescription; however, it is often recommended by medical professionals.	This drug is available online and does not require a prescription. It is not commonly recommended by medical professionals.	This drug is available by prescription only and must be recommended by a medical professional.
* Research * Support * Effective	Some studies indicate that this drug is as effective as other types of treatments, but there are also some studies that indicate this is only as effective as a placebo treatment.	Although this drug was originally marketed for weight loss, it shows potential for treating mental illness as evidenced by consumer reviews and testimonials.	Studies show this drug is as effective as other types of treatment, and results are demonstrated by several decades of rigorous scientific research.

Note. Drug A (95 words) is based on St. John's Wort, Drug B (91 words) is based on Acai berries, and Drug C (82 words) is based on SSRIs. Word count  $\mu = 89.33$ .

from which they were drawn. These results may also generalize to young adults in other collegiate settings based on comparable demographics.

**Ethical Considerations**

The study was approved by a university ethics committee. The informed consent emphasized voluntary participation and maintenance of confidentiality. All participants signed the informed consent via a digital signature prior to completing the survey. They were also provided disclosure information and signed a confidentiality agreement after completing the survey.

**Data Analysis**

The qualitative data were analyzed using the grounded theory method. This method requires marking key points in the data through a series of codes, which were derived directly from the empirical data.<sup>15</sup> Researchers drew deductive codes based on the treatment selection statements provided to participants and then derived additional 1-3 word phrases directly from the comments to evaluate emerging patterns. The codes were grouped thematically based on overlapping concepts and ideas.<sup>16</sup>

After coding and grouping was completed, the concepts were analyzed to determine overarching categories and themes for discussion.<sup>16</sup>

**Results**

**Overview of Results**

When structural keywords were removed for comment analysis, three distinct themes were found that focused on multiple aspects important to the participant's treatment selections in the health decision making process: *Shared versus Independent Decision Making*, *Confidence in the Research and the Drug*, and *Cost and Availability*. The major points from each theme are summarized in Table 2 based on the drug selected. In general, participants focused on 1-3 major themes throughout their individual responses, and many of the themes crossed over the same topics. There were overarching themes about safety and personal health, which were differentially discussed in each of the three treatment selection groups as part of the three major themes.

**Table 2. Summary points of major themes**

	<b>Health Decision Making</b>	<b>Confidence</b>	<b>Cost</b>
SSRIs	Deference to medical professionals	Focus on benefits and safety from using the scientific process	Higher costs offset by benefits of working with doctors
St. John’s Wort	Some medical support is better than none	Preference for consumer reviews over scientific research	Save time and money using over-the-counter treatments with some empirical support
Acai berries	Strong need to control decisions	Ambivalence/disdain toward the research process	Save time avoiding doctors and prescriptions

***Shared versus Independent Decision Making in the Treatment Selection Process***

Respondents expressed personal feelings toward prescriptions and doctors; specifically, if they prefer to rely on their own research and experience or would rather have recommendations from medical professionals. Those who selected SSRIs indicated a preference for deferring to a medical professional to make the treatment selection for them, whereas those who selected St. John’s Wort or acai berries preferred to have more control and autonomy in the treatment selection process.

Participants who selected SSRIs indicated a general reliance on advice from medical professionals and seemed to defer to doctors’ expertise and judgment when making medical treatment decisions. Many of these participants indicated that they preferred SSRIs to the other two options because it was available by “*prescription only.*” One respondent went even further by stating that “*all drugs should be taken with the advice of a medical professional and not self-prescribed (even if over-the-counter)*” with the exception of painkillers and antihistamines. Another stated that if a medical professional did not prescribe the drug, then there would be no way of knowing how it could affect current medication regimens.

These responses suggest there was a need for accountability and security that participants felt could only be provided by medical professionals. The explicit statement that professionals would be aware of any possible drug interactions indicated that participants might have felt that only medical professionals would know what is detrimental to the patient. In general, those who selected SSRIs expressed that physicians are a type of gatekeeper for drugs that really work, which makes physicians more reliable and trustworthy than an individual making his or her own choice based on limited information. This sense of trust in medical professionals seemed to comfort participants who selected SSRIs and allowed them to remove themselves from the treatment selection process.

Respondents who selected St. John’s Wort were also concerned with the potentially negative impact drugs have

on health. One person stated that “*just because it’s prescribed doesn’t mean it’s the best for you, homeopathic is better.*” This statement suggested a preference for natural remedies, which were perceived as safer than the pharmaceutical option. However, these respondents also indicated a consensus that *some* medical support is better than none at all. Even with preferring natural treatment options, they were hesitant to select a drug that does not have any professional support. In addition to using natural remedies that have some research support, these respondents indicated a desire to avoid the “*hassle*” associated with scheduling a doctor’s appointment and waiting to pick up prescriptions. They trusted that St. John’s Wort is “*the most safe*” and that over-the-counter accessibility is the most “*convenient*” because it could reduce symptoms while remaining easily accessible. One respondent stated:

*By being an over-the-counter drug, it is much more convenient to buy and use, compared to the process and time it takes to see a doctor to get a prescription. The drug is recommended by medical professionals which supports the assumption that the drug is effective and therefore, because of convenience and recommendation, this one seems like the best choice.*

Another respondent stated:

*Medication is not something I would purchase online, and assuming the over the counter variety is just as effective, I would prefer to get a medication without need for a “medical professional.”*

Even though those who selected acai berries also wanted to avoid the hassle associated with scheduling appointments and getting prescriptions filled, these participants had a strong need to be “*in control*” of themselves and their own treatment selection and health decision making processes. Likewise, they preferred natural remedies over pharmaceutical options. One participant stated, “*this treatment is the most natural which means it is less harmful*” than the other two treatment options. Participants who preferred the acai berries did not mention anything about the research supporting the drug,

or lack thereof in this case. These respondents seemed to focus more on starting with the simplest treatment option first, and moving on to other options at a later time if needed.

### **Confidence in Research and the Drug**

In addition to the type of preferred decision making style enacted for the treatment selection process, respondents indicate they were interpreting the research and medication regulation process as it related to the treatment descriptions. This theme was particularly relevant to participants who selected SSRIs because they often focused on the scientific aspect of research that supported the drug. Participants who selected St. John's Wort and acai berries were not differentiated in this theme as they both commented on aspects that were not directly influenced by the research supporting their drug of choice.

Those who chose St. John's Wort or acai berries indicated that scientific research should be more trustworthy than consumer reviews, but generally prefer the consumer reviews just the same. One participant states *"even though I shouldn't trust consumer reviews, I've learned to trust them more than 'rigorous scientific research' at least from a consumer's point of view."* This commenter's use of quotations around rigorous scientific research suggests ambivalence, or possibly disdain, toward the research process. The caveat expressed concern that consumer reviews should be trusted less than scientific research. However, the participant indicated one cannot help but ignore gut instincts to rely on scientific research because personal experience revealed consumer testimonials were more reliable. This is alarming considering that many homeopathic treatments rely on informal consumer reviews to promote use.

Even with the general dismissal of scientific evidence, respondents who selected St. John's Wort or acai berries indicate a belief that there is some form of regulatory body overseeing these over-the-counter drugs and that they rely on that regulation to ensure over-the-counter drugs are safe. One respondent states *"my limited understanding of the [Federal Drug Administration (FDA)] indicates to me that drugs available over the counter have been tested and approved for common use."* This is a common misconception among people who take over-the-counter drugs as opposed to prescriptions, despite the warnings that many over-the-counter drugs, such as health supplements and diet pills, are not necessarily regulated by the FDA.

Respondents who chose the SSRI expressed much greater appreciation for the research process than participants who selected the other two drugs. One participant stated that the SSRIs had *"more positive information than others,"* but other commenters provided much more detail. One such example stated that the SSRI option:

*... shows more scientific research that backs it up and evidence. It has reported side effects, indicating it has been thoroughly studied and surveys have been conducted. The percentage of positive measurable results is decent and significant, for there is a chance of seeing a difference by taking this drug both physiologically and mentally. It is also prescribed under the care of a medical professional, meaning that you yourself are being monitored, and under the care and treatment of usually a doctor, which would make me feel more safe in taking this drug, rather than something OTC.*

This respondent reflected on the benefits provided by the scientific process. There was a general feeling of safety knowing that the drug has been thoroughly vetted by decades of research, and that it is regulated as a medication available only through a prescription. These participants discuss the need for considering the medical professional's opinion as well as the safety provided by professionals monitoring drug use, in case there were any problems or interactions with other current medications.

### **Cost and Availability**

Many of the comments discussed the expenditure of time and monetary resources, as well as how those costs affected the respondents' treatment selection. This theme clearly differentiated the participants who chose SSRIs from the participants who chose St. John's Wort. Interestingly, this theme was only briefly discussed by participants who selected acai berries, mainly referencing the aversion to spending time in doctor's offices and waiting for prescriptions. It is possible that these respondents were not concerned with the monetary costs associated with their drug selection, but further research will be needed to determine the extent to which cost and availability affect one's selection of acai berries over St. John's Wort or SSRIs.

Participants who selected SSRIs focused primarily on how the drug can be obtained only through prescription and that it must be recommended by medical professionals. These respondents mentioned that the higher cost typically associated with this drug would be acceptable because of the benefits received by utilizing a medical professional for treatment. One participant remarked that:

*I chose the [SSRIs] overall because I would want something that is in fact effective, even though it would most likely cost more, I would also be monitored by checking in with my medical professional, and be able to discuss any side effects. The physician is more likely to be more educated about this drug, especially if he or she is prescribing it, for not only accountability purposes, but medical ethics, so I would definitely go with [SSRIs].*

The commenter is concerned with the multiple aspects of the treatment, including the effectiveness, progression of treatment, and knowledge of the medical professional. This indicates that the participant was concerned with future problems that could occur, such as the side effects, and how to proactively prevent issues from occurring by relying on a medical professional, even though this could cost more in the short- and long-term.

Another participant who selected SSRIs chose this drug because it is available by “*prescription only and you would have to see a doctor to get a script.*” For respondents who provided similar comments, there was a general consensus that controlled access to the drug meant that the drug would “*probably work better*” than a drug that is available over the counter. This indicates a belief that pharmaceuticals are more reliable than homeopathic treatments, which may mentally offset the added cost of time and money needed to acquire this treatment.

Participants who selected St. John’s Wort preferred homeopathic treatments that were easily accessible, as discussed in the other themes. These participants focused on how the drug is available over-the-counter, which meant it is probably had a “*better price range*” than drugs available by prescription only. In addition to the time needed to schedule and wait for appointments, respondents focused on the cost of seeing a doctor which could be used to try alternative treatments instead. These respondents agreed that going to a doctor is “*too expensive*” and if it was available over the counter without a prescription while still being recommended, then it “*will usually be safe, non addicting, and maybe inexpensive.*” One commenter argued that:

*[I] would choose a drug that is only available by prescription if we currently had socialized medicine in our country and visiting a doctor was low cost, but until that kicks into full-effect, I’d opt for an over the counter drug and skip the doctor visit altogether.*

Several other responses indicated that this drug “*is more readily available*” because it does not require a prescription to purchase. Likewise, some respondents indicated that having supporting research still influenced their selection, but they preferred the supported drug that is available without going to the doctor and is therefore easier to access.

## Discussion

The results provide insight into the treatment selection process and what information may influence that process from the young adults’ point of view. The majority of these respondents were female and at an age when critical medical decision making skills are being developed,<sup>13</sup> allowing us to focus on elucidating what they felt was the

most important and influential information within the treatment descriptions. However, the breadth and depth of the comments and emerging themes indicate that the points raised have the potential to be important to all young adults. Despite being given several key words such as research and side effects, respondents provided detailed information that went beyond these codes and applied across overarching themes of safety and personal health, both of which applicable to most young adults. The topics (shared versus independent decision making, confidence in research, and costs) that evolved from these descriptions can be used to enhance online presentations of mental health treatment descriptions that facilitate informed health decision making among young adults.

### ***Guidelines for Modeling Treatment Information***

Based on the comments provided by participants, we found three major areas of information within treatment descriptions that are salient to young adults. Based on analysis of these areas, we present general guidelines for how that future treatment descriptions can be improved to increase selection of efficacious treatments over pseudotreatments. First, addressing the amount of autonomy and self-directed assessment of available treatments allowed in the treatment selection process may increase utilization of empirical treatments. Second, incorrect impressions about the research process and overseeing regulatory agencies can be corrected through clear labeling. Third, knowledge about the cost and availability not only of the drug but also of the doctors and their offices can be increased through targeted outreach campaigns. Each is discussed in further detail below.

### ***Information-seeking and autonomy in the treatment selection process.***

Patient-centered care and shared decision making is popular and desirable to many people, but there is research suggesting some patients prefer a more paternalistic approach to decision making (i.e., deferring to a medical professional).<sup>17</sup> We noted this pattern among individuals in the current study with regard to the treatment selection process. Those who preferred SSRIs aligned with a more paternalistic approach to treatment selection, whereas those who preferred St. John’s Wort or acai berries preferred more autonomy in the treatment selection process. For example, participants who selected SSRIs focused on the importance of having a medical professional involved and controlling the decision process because of safety concerns about the drug and possible interactions. They also noted the presence of supporting scientific research creates a sense of trust in the drug and a pervasive belief that the drug will do what it was created to do because it is regulated (i.e., only available through a prescription despite increased costs). Alternatively, those who selected St. John’s Wort or acai berries preferred the ease of access and lower costs associated with over-the-counter medications, which does not necessitate direct involvement of a healthcare

provider. These participants had preconceived notions about the safety of using empirically supported treatments, with many indicating a perception that homeopathic treatments are safer.

Young adults who have preconceived notions about available treatments (which could potentially be incorrect or incomplete) may be educated through modification of treatment descriptions and inclusion of information about the wide range of treatment options available. For example, it is important to convey to patients that there are dozens of medications that fall under the broad category of SSRIs.<sup>24</sup> Additionally, there are the brand name versions of the drugs as well as generic versions.<sup>24</sup> Even though these are all well-regulated treatments requires a prescription, young adults may appreciate having the choice to select among several empirically supported treatments. Introducing choice into the treatment selection process may provide a sense of autonomy, which in turn may increase uptake of empirical treatments over pseudotreatments. Increased feelings of autonomy can also be achieved through provision of enhanced treatment descriptions (either in an analog form such as a pamphlet or digital form such as an information portal) describing and comparing several different treatment options.

Enhanced treatment descriptions are beneficial for a variety of reasons. For example, enhanced treatment descriptions could acknowledge the different cost structures of treatments (e.g., with or without insurance, pharmaceutical discount programs), which would address concerns related to pricing of the treatment. If information is available on accessibility, this could be included in the enhanced description as well. In addition to providing a sense of control, enhanced treatment descriptions could also be used to provide information about the efficacy of each prescription, supporting (or contradicting) research for the treatment, and relevant consumer testimonials. Although testimonials are not traditionally provided in prescription information sheets, many participants in the current study indicated that they prefer this informal review to scientific evidence. Therefore, including this information for each empirically supported treatment may increase selection of an efficacious treatment over a pseudotreatment.

**Research and regulatory agencies.** Participants who selected St. John's Wort preferred to avoid the arduous process of getting a prescription drug but still wanted the benefit of supporting scientific research. However, these participants noted the belief that over-the-counter drugs are regulated by organizations such as the FDA, which implies they believe these drugs are safe for consumption. While St. John's Wort supplements are regulated in European countries such as Germany (where it is a highly recommended over-the-counter treatment for depression and anxiety), it is not regulated like prescriptions and over-

the-counter medications in the US because it is classified as an herb.<sup>18</sup> Knowing that young adults may have a false sense of security because they believe the drug is regulated provides insight into what information should be presented in treatment descriptions. Treatment descriptions of all potential medications, including pseudotreatments and supplements, should clearly indicate if the drug is overseen by a regulatory agency.

Braun and colleagues<sup>19</sup> suggests that pharmacists may be the best point of entry for an oral discussion about homeopathic drug safety, and thus regulatory oversight, with young adults because aversion to doctors does not appear to extend to pharmacists. In fact, people are more likely to disclose all medication usage, including unsubstantiated treatments like acai berries, to their pharmacist as a means to avoiding unpleasant drug interactions.<sup>19</sup> This could create the opportunity for open and frank discussions about the benefits of empirically researched drugs over pseudotreatments. Likewise, this could provide the opportunity to teach young adults about the lack of oversight by regulatory agencies on over-the-counter treatments such as St. John's Wort. These medical professionals can proactively guide their patients by providing appropriate, accurate, and complete medical information regarding different treatment options.<sup>20,21</sup>

**Addressing costs and availability.** Many young adults indicated that they wish to avoid the hassle and cost associated with visiting the doctor, filling a prescription, and complying with medical monitoring while receiving treatment for mental health issues. However, young adults might not realize the range of medical treatment options that are available to them, especially college students who have access to university resources.<sup>13</sup> These university resources include low or no-cost treatment options available through the on-campus health and behavioral health centers.<sup>13,22</sup> Many campuses also offer counseling services at no charge to students, which could alleviate part of the concern mentioned by these participants. Getting young adult students to these resources may be as simple as advertising their availability. This could be accomplished through concerted efforts by the university health clinics. For example, emails sent out toward the beginning of each semester when students enroll for classes each year could include important information about the health services available on campus. These targeted emails may also benefit from including the associated cost and benefit structure of utilizing campus health resources. Additionally, posters may increase exposure to information about the health clinics if they are in highly visible areas with a lot of student traffic (such as the dining hall).

For young adults who do not have access to university health systems, there are other low-cost or free options available in many communities. This includes community

health clinics and clinics that offer services on a sliding scale. Additionally, pharmaceutical treatments for mental health disorders need not be full price for all individuals who take them. For example, Walmart and Target offer generic versions of some antidepressants for \$4/month or \$10 for a three-month supply.<sup>24</sup> There are also many pharmaceutical companies that will provide deeply discounted vouchers for patients who demonstrate a financial need. Increasing access to this information may help increase use of empirically-supported drugs over pseudotreatments. Because many young adults seek out health information online, the information portals could potentially play a key role in presenting community-based treatment centers and low or no-cost prescription alternatives.

### Future Directions

The results of the current study have indicated several avenues for future research. In addition to the directions discussed above, future research could also evaluate differences between males and females in treatment preferences and how those differences affect the treatment selection process. The role of education in the treatment selection process, and determining if the results are generalizable to other populations such as older adults are also potential areas of future research. Each point is briefly addressed.

In the current study, our sample included a 2:1 female to male ratio, which was representative of the student population from which the sample was drawn but not the overall young adult population. To determine if the findings generalize well to a broad young adult population, a follow-up study could be conducted with equivalent sampling from each sex. Some research suggests that there are few, if any, differences between males and females in patient acceptance of treatment.<sup>25</sup> However, others have demonstrated differences between the sexes for utilization of specific treatment options, such as surgery.<sup>26</sup> Therefore, an important next step will be determining if males and females differentially weight certain treatment description components during the treatment selection process.

Additionally, the study was conducted on a representative sample of young adults from a university population, which may not adequately represent all young adults. Higher exposure to research terminology during collegiate education may have cued our participants in to key terms which may not be as salient in a sample with lower education levels. However, our sample was a diverse group of young adults who ran the spectrum of decision making from the fully shared model to the paternalistic model. Furthermore, they elaborated on key issues such as cost and accessibility, which may be relevant to most young adults. Therefore, these findings may be applicable to a broader population. More research is needed to explore

differences in treatment selection among young adults with different levels of education.

Finally, preferences of young adults are often drastically different from those of older adults on a wide range of topics including autonomy and information-seeking behaviors for medical decisions.<sup>27,28</sup> The current study was designed to assess what young adults perceive as the most salient information within treatment descriptions. We predicted that these findings would not be applicable to an older adult population, and tested that prediction in a follow up study not reported here. As expected, older adults hold very different views about how to select pharmacological treatments for mental health issues (Talboy & Guttman, unpublished manuscript). Therefore, the results found here are relevant specifically to a young adult population. Additional research is needed to elucidate differences between how younger and older adults approach the treatment selection process.

### Summary

Several insights into how young adults interpret material related to the selection of pharmaceutical treatments for mental health issues were outlined with implications for what should be addressed in mental health treatment descriptions. These insights suggested several important pieces of information to include in future treatment descriptions. First, access to information about the wide range of treatment options available is important for informed decision making (including brand name and generic alternatives). Second, enhanced treatment descriptions for each drug, potential side effects, and scientific support could include complementary reviews from consumers and consumer advocates. These informal reviews are preferred to scientific findings by many young adults and aid treatment selection. Finally, increasing general knowledge about available medical resources, especially low-cost or no-cost doctor's offices and prescription drugs, may increase selection of empirical treatments over pseudotreatments.

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