

Adolescents' Attitudes and Opinions about Depression Treatment

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Abstract The purpose of this study was to determine adolescent preferences for depression treatment. Adolescents ($n = 156$) completed a survey that included: their preferences for type of depression treatment and the method of delivering it; their perception of the importance of side effects of depression treatments and a rating of their willingness to seek treatment if they were depressed. A screen for depressive symptoms (CES-D10) was also completed. Adolescents showed higher preference for psychotherapy than antidepressants. Greater severity of depression symptoms, perceived social support for the particular treatment modality, and general willingness to seek treatment predicted greater preference for

psychotherapy than for antidepressants. Family doctors, psychiatrists, and psychologists were the preferred treatment providers, and adolescents preferred that treatment be delivered in a private office. Weight gain was the most deterring side effect of antidepressants for girls and loss of sex drive for boys. Adolescents' preference for psychological therapy suggests that broader availability of psychotherapy may enhance help-seeking and compliance in depression treatment in this vulnerable population.

Keywords Adolescents · Treatment · Preferences · Depression

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Introduction

Adolescence is the most susceptible age for a depressive episode. As many as 25% of adolescents will experience a depressive episode (Lewinsohn et al. 1993). Adolescent females are twice as likely to develop depression compared to males (Thorpe et al. 2001). Depression affects social, family and school life and interferes with their normal developmental trajectory and potential functional outcome as young adults (Health Canada 1994). Adolescents with depression have higher rates of suicide than the general population and depression is the most significant risk factor for suicide in this age group. In Canada, suicide is the second leading cause of death in this age group (Health Canada 1994).

Despite their considerable vulnerability to depressive symptoms, only 25% of younger adolescents (ages 12–16) seek treatment when they have depressive symptoms (Gravel et al. 2002). Treatment seeking among older adolescents and young adults (ages 16–24) is even lower. Only 20.2% of females and 10.8% of males with mental health

problems sought help for these difficulties from friends, family, or health services (Biddle et al. 2004).

The Guidelines for Adolescent Depression in Primary Care (GLAD-PC) recommend active social support and increased monitoring for 6–8 weeks for mild depressive symptoms, as there is often clinically significant improvements with increases in social support alone (Cheung et al. 2007). For moderate to severe depressive symptoms, families should be referred to a mental health specialist promptly (Cheung et al. 2007). Both interpersonal and cognitive behavioral therapies, as well as antidepressants are recommended for treatment of moderate to severe depression (Cheung et al. 2007).

Patients who receive their treatment of choice, whether it be psychological, pharmacological or a combination, are more likely to remain in treatment and recover (TenHave et al. 2003). When a patient is matched to his or her preferred mode of treatment, he or she experiences greater depressive symptom reductions compared to patients who do not receive their preferred mode of treatment (Lin et al. 2005). Among a population of adolescent primary care patients, 50% preferred psychotherapy, 22% preferred antidepressants, and 28% preferred to “wait it out.” (Jaycox et al. 2006) Female adolescents prefer psychotherapy over antidepressants more strongly than males (Jaycox et al. 2006). Previous experience with depression treatment and depressive symptom severity predict general preference for any active treatment over waiting it out (Gum et al. 2006; Cooper et al. 2003). Conversely, high costs of treatment predict lower willingness to seek treatment among both adults and adolescents (Collins et al. 2004).

The social stigma associated with mental health care is a common barrier to treatment seeking for psychological symptoms in both adults and adolescents and may also play a role in treatment preference (Collins et al. 2004). Jaycox and colleagues found that despite a preference for psychotherapy, adolescent primary care patients fear rejection by peers if they saw a mental health professional (Jaycox et al. 2006).

The goal of the present study was to examine preference for depression treatments in high school students. Based on previous studies, we hypothesized that psychotherapy (described to our participants as “talk therapy”) would be preferred over antidepressants, that boys would prefer antidepressants and girls would prefer talk therapy, and that sex, severity of depressive symptoms, perceptions of social support for each treatment and general willingness to seek depression treatment would predict preference for talk therapy and antidepressants. We predicted that psychiatrists and psychologists would be the top-rated professionals to deliver care and that “in a mental health clinic” would be the top-rated location to receive treatment. We predicted based on Western gender norms (Stice and

Whitenton 2002; Murphy 2001) that the weight gain side effect would deter more girls than boys from taking antidepressants and that boys would be more deterred by the loss of sex drive side effect than girls.

Method

Participants

We distributed 350 consent forms to the students for parental consent and adolescent assent and 156 were completed and returned, which yielded a return rate of 44.6%. One hundred fifty-six adolescent students (76 boys, 80 girls) from a rural Nova Scotia high school participated in this study. The participants’ ages ranged from 15 to 21 years ($M = 17.20$ years, $SD = 1.10$, $N = 155$) and the grades ranged from 10 to 12. Most participants had parents who were married (65.2%), with a small proportion divorced (9.0%). Most parents had attained a high school diploma (38.5%) or some college (27.5%). All of the participants were Caucasian.

Ethics

The IWK Health Centre Research Ethics Board and the local school board, principal and teachers approved the study. The parents and adolescents signed informed consent/assent forms to participate in this study.

Inclusion Criteria

All of the students who were registered in an English literature course during the winter semester of the 2006–07 academic year at our chosen high school were eligible to participate in this study.

Exclusion Criteria

All of the students who were not registered in an English course during the winter semester of the 2006–07 academic year at our chosen high school were not eligible to participate in this study.

Measures

Three scales were developed for this study: *the Preferences for Depression Treatment Scale*, *the Perceptions of Social Support for Depression Treatment Scale*, and *the General Willingness to Seek Treatment Scale*. The items for the scales were based on the previous literature related to the issues for adolescents with depressive symptoms. For instance, some of the items in the *Preferences for*

Table 1 Characteristics of author-developed scales

Name of scale	No. of items	Sample questions	What scale intended to measure
Preference for talk therapy scale	10	Talk therapy costs too much money	How much a person wants talk therapy if depressed
Preference for antidepressants scale	10	Taking antidepressants would be bad for my health	How much a person wants anti-depressants if depressed
Perceived social support for talk therapy	3	My friends would think less of me if I was in talk therapy...	Perceptions of support from family/friends for talk therapy if depressed
Perceived social support for anti-depressants	3	My family would support my use of antidepressants...	Perceptions of support from family/friends for antidepressants if depressed
General willingness to seek treatment scale	5	I know how to get help to treat depression	Perceptions of willingness and ability to seek treatment

Depression Treatment Scale pertain to fears about addiction to treatment and the possibility that these treatments could disrupt their lifestyle and change their personality. These items come from studies which indicate that some adolescents perceive antidepressant medication as addictive (Draucker 2005), that adolescents often do not complete their treatment or feel that they would not be able to maintain a treatment regimen (Draucker 2005), and that they think they will be ridiculed for seeing a therapist (Jaycox et al. 2006). Similarly, the items for the *Perceptions of Social Support for Depression Treatment Scale* were derived from research about adolescents' concerns with peer rejection associated with treatment-seeking behaviors (Jaycox et al. 2006) and about the importance of parental support in adolescent treatment-seeking behaviors (Logan and King 2002). Finally, many of the items come from the work of Collins and colleagues about barriers to treatment-seeking behavior (e.g., cost) (Collins et al. 2004). The descriptive statistics and the sample items for these scales are summarized in Table 1. This project was the development study for these scales.

Preferences for Depression Treatment Scale

This scale has two sub-scales, one to assess preference for talk therapy and one to assess antidepressant preference. Each sub-scale has 10 statements pertaining to preference for the particular treatment modality, to which the participant responded in a 5-option, Likert scale format (ranging from “strongly agree” = 5 to “strongly disagree” = 1). Possible scores on each sub-scale range from 10 to 50 with a lower score indicating increased preference. These scores were then divided by 10 (the number of questions in the sub-scale) for subsequent analyses. The Talk Therapy and Antidepressant sub-scales had adequate internal consistency; Cronbach's α 's = 0.84 and 0.79, respectively.

Perceptions of Social Support for Depression Treatment Scale

This scale has two sub-scales, one to assess perceptions of social support from family and friends for talk therapy and the other to assess these perceptions for antidepressants. Each sub-scale has 3 statements pertaining to perceptions of social support for the particular treatment modality, to which participants responded in a 5-option, Likert scale format (ranging from “strongly agree” = 5 to “strongly disagree” = 1). Possible scores on each sub-scale range from 3 to 9 with a lower score indicating increased perception of social support. These scores were then divided by 3 (the number of questions in the sub-scale) for subsequent analyses. The Talk Therapy and Antidepressant sub-scales had adequate internal consistency, Cronbach's α 's = 0.74 and 0.70, respectively.

General Willingness to Seek Treatment Scale

This scale has 5 statements pertaining to the participants' willingness and ability to seek treatment for depression. This response format was identical to the other author-developed scales. The possible scores on each sub-scale range from 5 to 25 with a higher score indicating increased willingness to seek any treatment for depression. These scores were then divided by 5 (the number of questions in the scale) for subsequent analyses. This scale had satisfactory internal consistency (Cronbach's α = 0.61).

Other Survey Questions

Ratings of Professionals to Provide Treatment

The adolescents were asked to rate a list of 8 professionals (e.g., family doctor, psychologist, peer counselor, etc.) provided in the survey on how much they would like this professional to dispense treatment (talk therapy or

antidepressant medication) if they were to become depressed. The possible ratings ranged from 0 (“Not at all”) to 10 (“Very much”). The professionals listed were based on the professionals available in Eastern Canada determined by the authors. Each professional was rated individually; they were not ranked against each other.

Ratings of Locations to Receive Treatment

Similarly, the adolescents were asked to rate 6 locations (e.g., in a private office, in an office at school, etc.) provided in the survey on how much they would like to receive treatment in these places if they were to become depressed. The list of locations was generated by authors based on the possible locations available in Eastern Canada. The possible ratings ranged from 0 (“Not at all”) to 10 (“Very much”). Each location was rated individually. The list of professionals and locations provided in the survey can be found in Table 5.

Deterring Side Effects of Antidepressant Medication

In the survey, the adolescents were provided a list of 8 potential side effects (e.g., weight gain, loss of sex drive, blurred vision, etc.) of antidepressant medication. The list of potential side effects was based on the most commonly reported side effects according to pharmaceutical literature and the clinical experience of the child and adolescent psychiatrist in the study (ALB). The adolescents were asked to check off which side effects would deter them from taking antidepressants if they were depressed. The list of side effects provided in the survey can be found in Table 6.

Center for Epidemiological Studies Depression 10 Scale (Andresen et al. 1994)

This scale is a brief screening tool for depressive symptoms. The participants indicated the degree to which they have experienced each of the 10 symptoms with a 4-option, Likert scale (which ranged from “rarely or none of the time” = 0 to “all of the time” = 3). Possible scores can range from 0 to 30, where higher scores indicate an increase in symptom severity. A score of 10 or higher out of 30 is the cut-off for clinically significant depressive symptoms. Mean scores were used for analyses. This tool has been shown to be an acceptable tool to screen for depression in adolescents (Chabrol et al. 2002).

Procedure

The first author (KLB) instructed the school principal on the purpose and procedure of the study. The principal

familiarized herself with the study materials (consent/assent forms and survey) and then met with the teachers and explained the study purpose and procedure to them and how to collect consent/assent forms. The teachers explained the purpose and procedure of the study to the students, with emphasis on the voluntary nature of the study, and distributed the consent/assent forms. The data collection took place over 2 days in May, 2007, in school classrooms. The first author and a research assistant collected the consent/assent forms and gave surveys to the students. The surveys were numbered and the consent/assent forms were assigned the same number in order to match participants to their consent forms. The 12 page survey booklet was presented to the students and they were instructed to complete the survey in the order the questions were presented (demographic information, rating questions, author-developed scales, question about deterring side effects of antidepressant medication, CES-D 10). The participants were given 20 min to complete the survey in class. The non-participating students were given an in-class assignment. Each class was monitored by the first author, research assistant, and the teacher to ensure the participants’ confidentiality. After completion of the survey, the students were debriefed on the symptoms of depression and the treatment options in their local area. The symptoms of depression and treatment options were not explained to the participants before completing the survey in order to accurately assess their attitudes based on their prior knowledge. All of the students, whether they participated in the survey or not, were debriefed on depressive symptoms and the local resources for treatment after the surveys were returned to the first author and research assistant.

Statistical Analyses

In the preliminary analyses, Pearson correlations were calculated between age, grade and the measures, as well as among the measures themselves to determine if age should be included in the main analyses and to determine if the measures were redundant. One-way ANOVAs were computed to determine if participants differed significantly by parent education and parent marital status on the measures.

For the main analyses, *t*-tests (paired and independent-samples) were used to look at the overall mean differences in preferences for talk therapy and antidepressants and sex differences in preference. Two hierarchical multiple regressions were conducted to examine the predictions of preferences for talk therapy and antidepressants. Within-subjects ANOVAs, followed by post-hoc comparisons using a Bonferroni correction were computed to compare professional and location ratings. Chi-square analyses were used to examine sex differences in proportions of participants deterred by each antidepressant side effect.

Bonferroni corrections were used to control for type 1 error rate given the high number of χ^2 tests.

Results

Author-Developed Scales' Characteristics

Preferences for Depression Treatment Scale

The scores for the Antidepressant ($M = 3.08$, $SD = 0.66$) and Talk Therapy ($M = 2.28$, $SD = 0.62$) sub-scales in the Preferences for Depression Treatment Scale were normally distributed; the individual items' means ranged from $M = 3.78$ to 2.82 and the standard deviations ranged from 1.08 to 1.18 for the Antidepressant Sub-scale and the individual items' means ranged from $M = 3.00$ to 1.76 and the standard deviations ranged from 0.93 to 0.90 for the Talk Therapy Sub-scale. The scores on the individual items ranged from 1 to 5 and were normally distributed.

Perceptions of Social Support for Depression Treatment Scale

The scores for the Antidepressant ($M = 2.22$, $SD = 0.92$) and Talk Therapy sub-scales ($M = 2.07$, $SD = 0.82$) in the Perceptions of Social Support for Depression Treatment Scale were normally distributed; the individual items' means ranged from 2.40 to 2.07 and the standard deviations ranged from 1.18 to 1.08 for the Antidepressant sub-scale and the individual items' means ranged from 2.15 to 2.01 and the standard deviations ranged from 1.05 to 1.02 for

the Talk Therapy sub-scale. The scores on the individual items range from 1 to 5 and were normally distributed.

General Willingness to Seek Treatment Scale

The scores for this scale were normally distributed ($M = 3.49$, $SD = 0.68$). Means for individual items ranged from 4.10 to 3.29 and the standard deviations ranged from 0.97 to 1.07 . Scores on individual items range from 1 to 5 and are normally distributed.

Preliminary Analyses

All of the correlations are displayed in Table 2. Higher age and grade were significantly related to depressive symptoms (CES-D 10 score). Grade was significantly positively correlated with the perceptions of social support scores for antidepressants. Several of the measures were also inter-correlated. The youth whose parents had less education, $F(7, 146) = 2.90$, $p = 0.007$, or divorced marital status, $F(5, 149) = 2.27$, $p = 0.05$, reported significantly more depressive symptoms (CES-D 10 score).

Main Analyses

The mean preference score for talk therapy ($M = 2.28$, $SD = 0.62$) was lower than the mean preference for antidepressants ($M = 3.08$, $SD = 0.66$), which indicated increased preference for talk therapy, $t(154) = 16.52$, $p < 0.001$. There were no sex differences in preference for talk therapy $t(152) = 1.55$, $p = 0.12$ or antidepressants, $t(153) = -0.34$, $p = 0.73$.

Table 2 Correlations among descriptive variables and hypotheses variables

Variable	1	2	3	4	5	6	7	8
1. Age	–	0.77**	0.026	0.18*	0.12	0.89**	0.04	0.08
2. Grade		–	0.05	0.18*	0.17*	0.08	0.03	0.06
3. Seek score ^a			–	–0.15	–0.38**	–0.34**	–0.42**	–0.43**
4. CES-D 10 score ^b				–	0.36**	0.22**	0.18*	0.21**
5. Support for AD ^c					–	0.68**	0.49**	0.47**
6. Support for talk therapy ^d						–	0.35**	0.68**
7. Preference AD ^e							–	0.56**
8. Preference talk therapy ^f								–

^a Score derived from “general willingness to seek any treatment” scale

^b Depression score

^c Score derived from “perceived social support for antidepressants” scale

^d Score derived from “perceived social support for talk therapy” scale

^e Score derived from “preference for antidepressants” scale

^f Score derived from “preference for talk therapy” scale

* $p < 0.05$, ** $p < 0.01$

We developed separate regression models of preference for antidepressants and for talk therapy. We entered sex in the first step; CES-D 10 scores in the second step; and the perceptions of social support for the particular treatment (talk therapy or antidepressants) and general willingness to seek treatment (seek) scores in the third step. The model of preference for antidepressant was significant overall $F(4, 149) = 19.62, p < 0.001$. In the regression model, sex, CES-D 10 score, perceived social support for antidepressants score, and seek score predicted 35.2% of the variance. Sex was not a significant unique predictor of preference for antidepressants, $F(1, 152) = 0.04, p = 0.84$. The subsequent steps were significant predictors of preference for antidepressants, with F -values of $F(2, 151) = 3.18$ ($p = 0.044$) and $F(4, 149) = 19.62$ ($p < 0.001$), respectively. Further examination revealed that although CES-D 10 score has a significant impact on preference on step 2 ($t = 2.52, p = 0.013$), this impact was reduced to non-significance ($t = -0.31, p = 0.754$) with the addition of perceived social support for antidepressants and seek score (which together accounted for 33.0% of the variance) on step 3 (see Table 3 for regression details).

A significant model of preference for talk therapy also emerged, $F(4, 149) = 40.12, p < 0.001$. In total, sex, CES-D 10 score, perceived social support for talk therapy, and seek score predicted 58% of the variance. Sex was not a significant unique predictor of preference for talk therapy, $F(1, 152) = 2.40, p = 0.12$. CES-D 10 score predicted 6.1% of the variance in preference, which was significant, $F(2, 151) = 5.98, p = 0.003$. Similar to the preference for antidepressants model, perceived social support for talk therapy and seek score predicted most of the variance in the model (adjusted $R^2 = 0.51$). The interactions presented in this model were similar to those of antidepressant preference in that the CES-D 10 impact was reduced to non-significance ($t = 0.63, p = 0.53$) with the addition of perceived social support for talk therapy and seek score on the final step (see Table 4 for regression details).

A one-way within-subjects ANOVA showed a significant effect of the preferences for professionals $F(7, 102) = 34.92, p < 0.001$. An overall effect size of 0.26 (partial η^2) indicated that 26.0% of the variance is explained by the choice of different professionals. When the Bonferroni corrections were applied ($\alpha = 0.006$) it was determined

Table 3 Hierarchical regression predicting preference for antidepressants ($N = 154$)

Variable	R	R^2	Adjusted R^2	β	F/t	Sig	Sig change
Step 1	0.02	0.00	-0.01	-	0.04	0.84	-
Sex		-	-	0.02	0.02	0.84	-
Step 2	0.20	0.04	0.03	-	3.18	0.04*	0.01*
CES-D 10 score ^a		-	-	0.21	2.52	0.01*	-
Step 3	0.59	0.35	0.33	-	19.62	0.001*	0.001*
Support AD ^b		-	-	0.45	5.77	0.001*	-
Seek score ^c		-	-	-0.27	-3.71	0.001*	-

^a Depression score

^b Score derived from “perceived social support for antidepressants” scale

^c Score derived from “general willingness to seek any treatment” scale

Table 4 Hierarchical regression predicting preference for talk therapy ($N = 154$)

Variable	R	R^2	Adjusted R^2	β	F/t	Sig	Sig change
Step 1	0.13	0.02	0.01	-	2.40	0.12	-
Sex		-	-	-0.13	-	0.12	-
Step 2		0.07	0.06	-	5.98	0.001*	0.001*
CES-D 10 score ^a	0.27	-	-	0.25	3.07	0.001*	-
Step 3	0.72	0.52	0.51	-	40.12	0.001*	0.001*
Support talk Therapy ^b		-	-	0.60	9.44	0.0001*	-
Seek score ^c		-	-	-0.23	-3.85	0.0001*	-

^a Depression score

^b Score derived from “perceived social support for talk therapy” scale

^c Score derived from “general willingness to seek any treatment” scale

that family physicians, psychiatrists and psychologists were significantly preferred compared to the other listed professionals (guidance counselor, social worker, nurse, religious figure, and peer counselor) to give treatment, $p < 0.001$, but they were not rated different from each other (refer to Table 5 for mean ratings).

There were differences in ratings for treatment location, $F(5, 42) = 20.12, p < 0.001$. An overall effect size of 0.32 (partial η^2) indicates that 32.0% of the variance is explained by the choice of different locations. When Bonferroni corrections were applied ($\alpha = 0.008$) it was determined that “In a private office” was the preferred location ($p = 0.003$) (refer to Table 5 for the mean ratings of all listed locations).

Blurred vision, sleeping problems, stomach problems, increased anxiety, and increased thoughts of self harm equally deterred boys and girls from taking antidepressants: χ^2 's ranged from 0.014 to 2.31 and p 's ranged from 0.13 to 0.91. Increased aggression ($\chi^2 = 3.81, p = 0.051$) and increased thoughts of self harm ($\chi^2 = 3.20, p = 0.074$) had marginal sex differences in deterrence. Weight gain ($\chi^2 = 10.58, p = 0.001$) and loss of sex drive ($\chi^2 = 5.82, p = 0.016$) had significant sex differences in deterrence (refer to Table 6 for all sex differences in side effect deterrence). Given that there were 8 Chi-square analyses, Bonferroni corrections ($p = 0.00625$) were used. Once

Table 5 Ratings of professional and location

Aspect of treatment	M	SD
Professional		
Family doctor	5.46	3.40
School/guidance	2.94	3.02
Counsellor		
Psychologist	5.75	3.49
Psychiatrist	5.77	3.51
Social worker	3.23	3.21
Nurse	3.67	3.17
Religious figure ^b	1.65	2.65
Location		
School office	1.28	2.32
Mental health clinic	3.42	3.89
Private office	6.44	4.17
Internet	1.56	2.70
Telephone	1.33	2.47
Other	2.70	3.89

$N = 103$ for Professional, $N = 43$ for Location. Ratings on a scale from 0 (not at all) to 10 (very much)

^a I don't know how much I would prefer any treatment

^b Religious figure option was written as “Priest, Minister, or Rabbi” on the survey

Table 6 Chi-square analyses of deterring side effects of antidepressants

Side effect	Girls (%)	Boys (%)	χ^2	p
Blurred vision			0.01	0.91
Yes	73.1	72.2		
No	26.9	27.8		
Sleep problems			2.3	0.13
Yes	54.8	48.0		
No	61.5	38.5		
Weight gain			10.6	0.001**
Yes	84.6	61.1		
No	15.4	38.9		
Anxiety			0.5	0.49
Yes	82.1	77.5		
No	17.9	22.5		
Aggression			3.8	0.051
Yes	79.5	65.3		
No	20.5	34.7		
Thoughts of self harm			3.2	0.074
Yes	80.8	68.1		
No	19.2	31.9		
Stomach problems	0.4	0.51		
Yes	79.5	75.0		
No	20.5	25.0		
Loss of sex drive			5.8	0.016*
Yes	59.0	77.5		
No	41.0	22.5		

$N = 150$, 72 males, 78 females, $df = 1$

* Significant, $p < 0.05$. ** Significant, $p < 0.0063$ (Bonferroni)

these corrections were applied, only the sex difference in deterrence for weight gain remained significant.

Discussion

Adolescents and young adults are the most vulnerable groups to experience depression, but it is often not diagnosed and frequently remains untreated in this age group. The purpose of this study was to determine treatment preference for depression in a rural adolescent sample. In congruence with the findings of Jaycox and colleagues (Jaycox et al. 2006), talk therapy had a higher preference score than antidepressants as a treatment for depression in our adolescent participants. Talk therapy was preferred by the majority of individuals; 92.0% of boys and 94.9% of girls rated talk therapy higher than antidepressants. In this study at least 48% of the participants would refuse antidepressants as treatment for depression based on the

potential side effects. The difference between talk therapy and antidepressants was statistically significant and clinically meaningful.

There is evidence that respecting youth preference for depression treatment increases the likelihood of both treatment compliance and response (Lin et al. 2005). Sex did not predict a stronger preference for either antidepressants or talk therapy. This is contradictory to our hypothesis and to findings in adult populations, where women preferred counseling and men preferred antidepressant medication as treatment for depression (Dwight-Johnson et al. 2000). This is also inconsistent with the research of Jaycox and colleagues (Jaycox et al. 2006), where being female predicted preference for psychotherapy in adolescent primary care patients. Our study was based on a rural, non-clinical sample and these sample characteristics may contribute to this study's inconsistency with previous research.

Our study found severity of depressive symptoms predicted preference for antidepressants and talk therapy, suggesting consistency with other research (Cooper et al. 2003) that previous diagnosis and greater disease burden predicts preference for treatment over waiting it out. However, once perceived social support and willingness to seek help were included in the analysis, the role of depressive symptoms in treatment seeking was reduced to non-significance in the models for preference of both treatments. The perceived social support of antidepressants and talk therapy was the greatest predictor of preference for antidepressants and talk therapy. This may indicate that social support and the willingness/ability to seek help for depression is more crucial to actively seeking help than the severity of the depressive episode. These findings suggest that adolescents who believe that they will not be supported by their family and/or peers would not seek treatment for depressive symptoms, which has been supported in previous qualitative studies (Wisdom and Agnor 2007; Elliott and Larson 2004). Adolescents with depressive symptoms who report witnessing their friends mocking peers who are known to have symptoms of mental illness avoid seeking help for their symptoms (Wisdom and Agnor 2007). Similarly, adolescents of parents who express stigmatizing attitudes towards the treatment of mental illness are less likely to disclose their depressive symptoms (Elliott and Larson 2004). This may be linked to widespread stigma surrounding mental health disorders and their treatments (Collins et al. 2004). Adolescents, although they may show preference for psychotherapy, may fear the peer rejection associated with undergoing such treatment (Jaycox et al. 2006). This is a particularly salient issue among adolescents with depression, as they perceive more rejection in general from peers than healthy controls (Pyne et al. 2004). The depressive illness symptoms can be a significant

barrier to accessing help, and it is possible that the social support and ability to seek help are key factors that need to be addressed in order to increase the numbers of depressed youth seeking treatment.

Our hypothesis for the top-rated professionals was partially supported, in that psychiatrists, psychologists, and family doctors were among the top rated professionals preferred to deliver depression treatment (which was defined as prescribing antidepressants or providing some form of psychotherapy/counseling, but the adolescents may not have been aware of which professional typically provides which forms of treatment). It was encouraging that family physicians were also seen as preferred professionals for treating depression as they are much more available to most adolescents than psychiatrists or psychologists. A private office was the most popular location to receive depression treatment, perhaps because of the stigma of mental health clinics and perceived lack of confidentiality/privacy in other settings.

Peer acceptance may also be linked to our findings on the sex differences in deterring antidepressant side effects. Complementary to our hypotheses, girls were more deterred by potential weight gain than boys, while boys were more deterred by potential loss of sex drive than girls. However, at least half of the entire sample found all antidepressant side effects deterring. Girls experience a great deal of pressure to be thin (Stice and Whitenton 2002). For adolescent males, sexual experience comes with higher social status and sexual impotency is emasculating for men of all ages (Murphy 2001), so it is unsurprising that they would rate this side effect as most deterring. These social pressures may contribute to gender differences concerning the most deterring side effects of antidepressants.

There are several limitations to our study. This sample was from a homogenous population; all participants were Caucasian, rural adolescents from the same school, whose parents were mostly married with high school or some college education. However, none of these descriptive variables were related to the predictor or outcome variables with the exception of CESD-10 scores, with lower education and non-married marital status being associated with increased depressive symptoms. Our results may not generalize to other samples. This sample was a volunteer sample; the participants had to take permission forms home to their parents and bring them back signed before they could participate in this study. The results of non-responders may not reflect the results of our sample. Additionally, students had to complete these surveys in their classrooms and this may have, in spite of our best efforts, influenced their answers. Finally, the options of treatment methods, depression treatment experience, treatment locations, and professionals were not exhaustive.

This study should be repeated in a larger sample to confirm these preliminary findings. Currently there are no plans for the authors to conduct this follow-up research.

This study suggests that the low rate of treatment-seeking for adolescents with depressive symptoms can be increased (Gravel et al. 2002). Perceived social support from family and friends is crucial to encourage an adolescent to seek help as depressed adolescents perceive more stigmatization from peers than healthy controls (Jaycox et al. 2006). Increased efforts should be made to educate all youth and parents about depression. This education should include awareness of depression symptoms, available treatment options, and the value of social support in assisting those who need care to seek help.

The family physicians must be provided the skills and support to treat depression in youth, as they are among the highest rated professionals to administer depression treatment and are the most available resource in most locations. This is similar to the findings among young adults, 88% of which said that they would consult a family physician if they experienced depressive symptoms (Pescosolido et al. 2008). Furthermore, 78% of American adolescents who sought help for depression sought help from a family physician when they experienced depressive symptoms (Culp et al. 1995).

Adolescents strongly prefer talk therapy. Thus health care programs should provide professionals with skills in evidence based talk therapies for treatment of depression. Because of the high prevalence of depression in adolescents, the acceptance and effectiveness of innovative approaches such as the use of the internet to delivering depression care should be investigated.

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