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Effects of a Brief Psychotherapy Commercial on Attitudes and Referral Likelihood in

Healthcare Providers

by

Wilson T. Trusty

A thesis

submitted in partial fulfillment

of the requirements for the degree of

Master of Science in the Department of Psychology

Idaho State University

Spring 2020

To the Graduate Faculty,

The members of the committee appointed to examine the thesis of Wilson Trusty find it satisfactory and recommend that it be accepted.

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Effects of a Brief Psychotherapy Commercial on Attitudes and Referral Likelihood in

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Thesis Abstract—Idaho State University (2020)

Individuals with mental health concerns often first seek help from primary care providers (PCPs); thus, working with PCPs to increase referrals to psychotherapy may help to optimize treatment-seeking. The current study tested the effects of a brief, online video intervention on psychotherapy attitudes and likelihood of referral among a sample of PCPs (n=81) and healthcare students (n=73). Participants were randomly assigned to watch a video encouraging seeking psychotherapy for depression (intervention) or seeking treatment in general for depression (control). Participants then indicated their likelihood of referring a depressed vignette patient to psychotherapy and completed measures of psychotherapy attitudes and stigma. Controlling for gender and history of personal psychotherapy use, the intervention had no effect on attitudinal variables or referral likelihood. However, attitudes mediated the relationship between perceived public stigma and referral likelihood. Interventions may need to address practical and attitudinal variables together in order to facilitate referrals.

Key Words*: primary care, interprofessional, mental health, referral, psychotherapy

Effects of a Brief Psychotherapy Commercial on Attitudes and Referral Likelihood in

Health Care Providers

In recent years, the field has witnessed a mounting recognition of psychotherapy's effectiveness, and it is now seen as the first line treatment option for many mental health concerns (American Psychological Association [APA], 2013; Chakhssi et al., 2018; David et al., 2017; Steinert et al., 2017). Despite this recognition, most patients with mental health needs still never seek or receive psychotherapy (Substance Abuse and Mental Health Services Administration, 2017; Han et al., 2016). Instead, many with mental health concerns choose to share those concerns first with primary health care providers (PCPs; Kohn et al., 2018), who often do not refer their patients to psychotherapy (Kravitz et al., 2006). Thus, addressing PCPs' attitudes toward psychotherapy and referral likelihood may be one way to increase access to this highly effective intervention. Efforts have been made to facilitate referrals for psychotherapy (e.g., Upshur & Weinreb, 2008), but there is still a growing trend toward receiving medication alone for mental health concerns (Han et al., 2016). Thus, additional research is needed to test methods to improve PCPs' attitudes toward psychotherapy and referral likelihood when patients express a mental health need.

Barriers to Referrals

There may be several reasons why PCPs do not refer some patients with mental health concerns to psychotherapy. These reasons have been broadly classified as practical barriers (e.g., long waitlists) and attitudinal barriers (e.g., negative views of psychotherapy). The majority of past research with PCPs has focused on practical barriers. For example, PCPs have reported that perceived lack of available mental healthcare services (Sigel & Leiper, 2004), long waitlists to see mental healthcare specialists (Hartley et al., 1998), and patient preferences against

psychotherapy (Dumesnil et al., 2012) decrease their likelihood of making referrals. Patient difficulties with transportation, particularly in rural areas (Gondi & Patel, 2016), and complications with insurance reimbursement can also present practical obstacles. Efforts to address these barriers have included federally- and state-funded transportation assistance programs (Ganuza & Davis, 2017), health insurance parity laws (Barry et al., 2016), and integration of on-site behavioral healthcare providers in primary care clinics (Vogel et al., 2017).

Although addressing practical barriers to PCP referrals to psychotherapy is necessary, attitudinal factors may also affect PCPs' likelihood of referring patients to psychotherapy. Research on attitudinal barriers in PCPs is sparse; however, a plethora of research on attitudinal barriers in the general public exists. The most commonly studied attitudinal variables in the general public include perceptions of public stigma (the belief that people think poorly of those who attend psychotherapy; Vogel et al., 2009) and self-stigma (predictions that one's own self-esteem would decrease if psychotherapy were sought; Vogel et al., 2006). Although both of these types of stigma have been found to predict attitudes, a meditational model where perceptions of public stigma are internalized into self-stigma, which in turn leads to negative attitudes toward seeking psychotherapy, has been repeatedly found in the literature (Mackenzie et al., 2019; Vally et al., 2018; Vogel et al., 2009). Finally, these attitudes have been found to be predictive of intentions to seek psychotherapy as well as actual help-seeking behaviors (Hammer et al., 2019; Mojtabai et al., 2016; Topkaya et al., 2017).

Although the role of attitudinal barriers to seeking psychotherapy in the general public is well-established (Li et al., 2014) and stigmatizing views of patients with mental illness have been documented among medical providers (Janouskova et al., 2017; Rao et al., 2009), the exact nature of PCPs' attitudes toward psychotherapy is less clear. Some research suggests that PCPs

may hold positive views about psychologists and psychotherapy (Sigel & Leiper, 2004), but other research suggests negative beliefs about psychotherapy's effectiveness and desirability (Alvidrez & Arean, 2002). Although intuitively, one would assume that more positive attitudes (and less perceived public and self-stigma) toward psychotherapy in PCPs would result in an increased likelihood of referring patients to psychotherapy when there is a mental health need, to our knowledge, studies have yet to empirically examine the relationship between these variables.

Addressing Attitudinal Barriers

In addition to recognizing the predictors of psychotherapy referral likelihood in PCPs, research is needed to identify methods to increase referral likelihood for patients who present with mental health concerns. Although studies specifically targeted at PCPs have yet to be conducted, a few studies have investigated brief, direct-to-consumer psychotherapy marketing commercials for reducing attitudinal barriers for seeking psychotherapy in the general population. In one study using a video format (Demyan & Anderson, 2012), 270 undergraduate participants were randomized to watch a commercial promoting psychotherapy or to participate in a control condition. Those in the intervention group reported significantly more positive attitudes toward seeking help than the control group, but there was not a significant difference in stigma. A similar study tested online commercial interventions with undergraduates. Gallo and colleagues (2015) randomized 344 participants to one of four groups, and each was administered a different set of three related psychotherapy commercials embedded within a 30-minute video segment with unrelated content; participants watched one 30-minute segment with the three embedded commercials once per week for three weeks. The researchers found a small effect, where more participants in one of the intervention groups reported greater intentions to seek psychotherapy than those in the other three groups at the one-week and three-month follow-ups.

Another study (Brecht et al., 2017) tested effects of the American Psychological Association's Psychotherapy Works videos (https://www.apa.org/helpcenter/psychotherapy-works) in an Amazon Mechanical Turk sample (*N*=983). Participants watched one of the three Psychotherapy Works videos or a control video. After watching the videos, all of the intervention groups reported lower perceived public stigma than the control group, but there was no difference in self-stigma between groups. There were also no significant differences in either type of stigma among the three intervention groups. In addition, the participants in all of the intervention groups were more likely than those in the control group to report a preference for psychotherapy over medication after viewing the videos.

Overall, these studies indicate that brief video interventions can be effective for addressing attitudinal barriers to seeking psychotherapy in the general population; however, such videos have not been tested among PCPs. PCPs may respond differently from general public samples because of their training and more frequent exposure to patients with physical health and mental health problems. In addition, it is unknown whether these interventions could have an effect on PCPs' referral decisions.

The Current Study

The current study had three aims: (1) to test whether exposure to one of the APA Psychotherapy Works videos would result in higher likelihood of referral to psychotherapy among PCPs, (2) to test whether the video would reduce attitudinal barriers to referral, and (3) to test attitudinal predictors of referrals. Given increasing trends emphasizing interprofessional collaboration in medical training programs (Kashner et al., 2017), we also included healthcare students in our sample. Because of the dearth of literature on attitudinal predictors of referrals, we drew on previous literature identifying mediation models of psychological help-seeking in the

general public (e.g., Topkaya et al., 2017). Specifically, perceived public stigma was hypothesized to have an indirect effect on referral likelihood via self-stigma and then attitudes toward seeking psychotherapy. We also explored whether a similar model would predict participants' likelihood of personally seeking psychotherapy for depression and whether the intervention video would result in higher personal help-seeking likelihood. These results have the potential to give insight into attitudinal barriers that may impede referrals to psychotherapy. The results could also highlight potential methods of addressing lower referral likelihood due to these barriers, which may improve care for primary care patients with mental health concerns.

Method

Participants

Licensed healthcare providers' email addresses were requested from the boards of medicine and boards of nursing in Idaho, Montana, Wyoming, Utah, and Washington; lists were received from the Idaho Board of Medicine and the Wyoming State Board of Nursing. The recruitment email, which advertised a study on attitudes toward mental healthcare, was sent to 1873 providers in total. The final PCP sample ($n = 81$) consisted of Doctors of Medicine (MD; 66.7%), Doctors of Osteopathy (DO; 13.6%), Nurse Practitioners (NP; 13.6%), Doctors of Nursing Practice (DNP; 4.9%) and Doctors of Philosophy (PhD; 1.4%). The initial response rate to the recruitment email was 8.5%. A total of 159 providers initiated the study; however, 24 were removed because they indicated that they were not in a primary care setting and 54 were removed for failing to pass the attention check items or not finishing the survey. The majority of participants identified as White (97.4%; Latinx=1.3; Multicultural/Mixed Race=1.3%) and male (55.6%; female = 44.4%), with a mean age of 48.28 years ($SD = 11.64$). They reported working in private practice (45.7%), hospitals (12.3%), community mental health centers (11.1%),

outpatient hospital clinics (6.2%), Federally Qualified Health Centers (4.9%), and other settings (19.8%). On average, they had held their most advanced medical degree for approximately 18 years (SD=11.50).

A second recruitment email was sent to the directors of healthcare training programs (k= 9) in Idaho, Montana, Wyoming, Utah, and Washington. Training directors were asked to forward the recruitment email to their students. Because the recruitment email was forwarded to students by program administrators, we were unable to determine the response rate. A total of 97 students initiated the study; however, 24 were removed because they did not complete the majority of the study measures or failed the survey attention checks. The remaining student participants (n=73) were from physician assistant (37%), graduate (39.7%) and undergraduate (20.5%) nursing, and medical (2.7%) programs. Students predominately identified as White (94.5%; Latinx=1.4%; Asian=1.4%; Multicultural/Mixed Race=1.4%; Black=1.4%) and female (77.1%; male=22.9%), with a mean age of 28.85 years (SD=9.94). They reported working in hospital (26.9%), private practice (4.2%), and community health settings (4.2%), though over half (54.9%) reported no current clinical placements. The majority (57.6%) had not yet obtained clinical hours; for those who had obtained hours, the modal number was 100 (M=295.89, SD=521.18).

Procedure

Interested participants were instructed to click on a link that directed them to the study, which was housed in a secure, online survey platform. After providing informed consent, participants were randomized to watch either an intervention or control video. Following the video, participants were instructed to read a clinical vignette and rate items related to their referral preferences. They were then asked to complete measures of attitudes and stigma toward

psychotherapy and a demographics questionnaire. Attention check items were embedded within the survey (e.g., "As your answer to this question, please select, 'Strongly agree'.") At the end of the survey, they were directed to a debriefing page which explained the purposes of the study and included the option to enter a raffle to win one of four $100 Amazon gift cards. This study was approved by the Institutional Review Board at the authors' university prior to data collection.

Materials

Videos. The intervention video was *Psychotherapy: Good for Your Health* (1 minute 31 seconds; https://www.youtube.com/watch?v=fbo_dtAOLD0) from the American Psychological Association's Psychotherapy Works series. The video explains that while medication is sometimes needed for mental health problems, psychotherapy alone is often effective and does not have the unwanted side effects of medication. The video also encourages asking a doctor for a referral to a licensed psychologist. The control video, *What Is Depression?*, from the National Alliance on Mental Illness (1 minute 8 seconds; https://www.youtube.com/watch?v=CTXkyFbGqEg) provides information on depression symptoms and encourages seeking treatment, but does not mention any one treatment type.

Clinical Vignette. Participants were presented with a description of a patient meeting minimum criteria for a moderate depressive episode according to the International Classification of Diseases-10 (World Health Organization, 1992):

> Mr. Smith is a 35-year-old construction supervisor who is complaining of feeling
>
> depressed and having a lack of energy most of the day every day for the past two months.
>
> He reports that he has been having trouble concentrating lately and that he has been
>
> having a hard time making decisions at work, which he says is unusual for him. He also

says he has been feeling extremely guilty for making even the smallest mistakes. He

endorses decreased appetite since he has been feeling depressed, and he says he's lost

about 10 pounds in the past two months. He reports having disrupted sleep most nights,

which he says he did not have before these problems started. He denies suicidal ideation

and psychotic symptoms.

Participants were then asked to complete two questions indicating their likelihood of referring

the patient to psychotherapy. The first was a dichotomous choice question asking for their first

treatment recommendation (antidepressant medication or referral to psychotherapy). The second

question asked for their likelihood of recommending each option, with response options ranging

from 1 (not at all likely) to 7 (very likely). They were also asked to indicate their own likelihood

of seeking both antidepressant medication and psychotherapy using the same question, but this

time thinking about if they were to personally experience depressive symptoms.

Perceived Public Stigma for Seeking Psychotherapy. The Perceptions of

Stigmatization by Others for Seeking Help scale (PSOSH; Vogel et al., 2009) is a five-item self-

report questionnaire that measures participants' beliefs about how negatively other people would

view them for seeking psychotherapy or counseling (e.g., "If you sought counseling services for

this issue, to what degree do you believe that the people you interact with would react negatively

to you?"). Responses are given on a Likert scale of 1 to 5, and total scores are divided by 5;

possible scores range from 1 to 5, with higher scores indicating higher perceptions of public

stigma. The PSOSH has demonstrated good internal consistency ($\alpha = .88$) and test-retest

reliability ($r = .82$; Vogel et al., 2009). It has been shown to be moderately correlated with other

measures of stigma related to seeking psychological help, such as the Stigma Scale for Receiving

Professional Psychological Help (Komiya et al., 2000; Vogel et al., 2009). In the current study, an internal consistency of $\alpha = .91$ was found.

Self-Stigma for Seeking Psychotherapy. The Self-Stigma of Seeking Help scale (SSOSH; Vogel et al., 2006) is a 10-item questionnaire that measures beliefs about the extent to which seeking professional psychological help would negatively impact one's self-esteem (e.g., "I would feel inadequate if I went to a therapist for psychological help."). Responses are given on a Likert scale of 1 to 5 and total scores are divided by 10, with possible scores ranging from 1 to 5; higher scores indicate higher levels self-stigma. The measure has demonstrated good internal consistency ($\alpha = .89$) and test-retest reliability ($r = .71$). It has been found to be positively correlated with scales measuring anticipated risks of seeking psychological help, negative attitudes toward seeking psychotherapy, and lower willingness to seek help (Vogel et al., 2006) and has been found to load onto a distinct factor from items measuring perceived public stigma (Vogel et al., 2009). The internal consistency was $\alpha = .85$ in the current study.

Attitudes Toward Seeking Psychotherapy. The Mental Help Seeking Attitudes Scale (MHSAS; Hammer, Parent, & Spiker, 2018) contains nine items measuring positive and negative appraisals of receiving professional psychological help. It begins with the stem, "If I had a mental health concern, seeking help from a mental health professional would be..." followed by nine sets of opposing adjective pairs (e.g., useless, useful). Each response is given on a 7-point scale with the adjective pairs serving as anchors at each extreme of the scale; total scores are divided by 9. Possible scores range from 1 to 7, with higher scores indicating more positive attitudes. The MHSAS has demonstrated excellent internal consistency ($\alpha = .94$) and good test-retest reliability ($r = .76$; Hammer et al., 2018). It has also been shown to be positively correlated with another widely used attitude measure (Attitudes toward Seeking Professional Psychological

Help Scale: A shortened form [ATSPPH; Fischer & Farina, 1995]) and intentions to seek counseling, and was negatively correlated with perceived public stigma and self-stigma for seeking psychotherapy (Hammer et al., 2018). An internal consistency of $\alpha = .90$ was found in the current study.

Results

Preliminary Analyses

First, multivariate normality of referral predictors (stigma and attitudes) was examined. Normality assumptions were violated. However, the main study analyses (chi-square test of association, ANOVA and mediation analyses with bootstrapping) are robust to non-normality (Blanca et al., 2017; McHugh, 2013; Ng & Lin, 2016). Outliers were also examined, and one participant was identified and removed from all analyses. Participants' time spent taking the survey was verified as well, and all appeared to spend sufficient time to provide valid responses. One participant was missing data for one measure, and they were excluded from analyses that used that measure; there was no other missing data.

Zero-order correlations and descriptive statistics for the main study variables are found in Table 1. Attitudes toward seeking psychotherapy were the only hypothesized predictor that was significantly correlated with referral to psychotherapy. However, all attitudinal variables were significantly correlated with likelihood of attending personal psychotherapy. Likelihood of referral to psychotherapy was high (6.33 out of 7), though likelihood of prescribing antidepressant medication was lower; a similar pattern was observed for likelihood of seeking personal psychotherapy and antidepressant medication. Attitudes toward seeking psychotherapy were slightly more positive than in a large general population sample (Hammer et al., 2018), and perceived public stigma and self-stigma were somewhat lower than in previous samples (Vogel

et al., 2006; Vogel et al., 2009). We also tested associations of demographic (e.g., student status, gender) and practice characteristics (e.g., number of direct patient care hours per month) with referral of the vignette patient and self-referrals to psychotherapy. Those who identified their gender as female were significantly more likely to refer the vignette patient to psychotherapy (t[152] = 2.86, p = .005) and to report they would seek psychotherapy themselves if they experienced depression (t[152] = 3.89, p < .001). Participants who had attended or were currently attending personal psychotherapy (54.8%) were not significantly more likely to refer (t[151] = 1.95, p = .063) but indicated higher likelihood of seeking psychotherapy for depression (t[151] = 2.70, p = .008). As such, gender and a history of personal psychotherapy use were added as covariates to the main analyses. No other significant associations were found, and the intervention and control groups did not differ significantly on any demographic or practice characteristics.

Intervention Effects

We hypothesized that exposure to the intervention video would result in higher likelihood of referral to psychotherapy in the vignette task, as defined by a dichotomous choice question (antidepressant medication or referral to psychotherapy) and 7-point Likert scale questions. In the control group, 53 participants indicated that referral to psychotherapy would be their first choice, while 26 indicated they would recommend antidepressant medication. In the intervention group, 52 said psychotherapy would be their first choice, while 22 indicated they would choose antidepressant medication first. A chi-square test of association indicated that the proportion of participants that chose psychotherapy as their first treatment recommendation did not differ by group, χ^2(1) = .18, p = .672. In addition, likelihood to prescribe antidepressant medication and

refer to psychotherapy according to the Likert scale questions did not differ by condition after controlling for gender and history of psychotherapy use (see Table 2).

We also hypothesized that, after controlling for gender and history of personal psychotherapy use, exposure to the intervention video would result in lower levels of perceived public stigma and self-stigma for seeking psychotherapy and more positive attitudes toward psychotherapy; we also ran exploratory analyses on likelihood to seek antidepressant medication and psychotherapy for depressive symptoms. See Table 2 for the results of the ANCOVAs. There was no significant effect of the intervention on either type of stigma or attitudes, though there were differences in means in the expected directions. Similarly, the intervention had no effect on likelihood of seeking personal psychotherapy for depression. However, likelihood of seeking antidepressant medication was significantly lower in the intervention group.

Predictors of Referrals and Personal Psychotherapy Use

We hypothesized that perceived public stigma and self-stigma for seeking psychotherapy, as well as attitudes toward psychotherapy, would predict referrals to psychotherapy. Predictors were entered in the model simultaneously, and the covariates from the ANCOVAs, gender and history of personal psychotherapy use, were included to determine whether the attitudinal predictors added unique predictive validity to the model. The model predicting likelihood of referral was significant ($F[5, 145] = 3.45$, $p = .006$, $R^2 = .11$). Gender ($\beta = -.21$, $t = 2.57$, $p = .011$) and attitudes ($\beta = .18$, $t = 2.09$, $p = .038$) were significant unique predictors, but self-stigma ($\beta = -.08$, $t = .94$, $p = .350$), perceived public stigma ($\beta = .13$, $t = 1.34$, $p = .181$) and personal psychotherapy use ($\beta = .12$, $t = 1.49$, $p = .139$) were non-significant. The model predicting likelihood of seeking personal psychotherapy was also significant ($F[5, 145] = 8.56$, $p < .001$, $R^2 = .22$). Gender ($\beta = -.28$, $t = 3.73$, $p < .001$) and attitudes ($\beta = .26$, $t = 3.32$, $p = .001$)

were significant predictors, but self-stigma ($\beta = -.12$, $t = 1.37$, $p = .174$), perceived public stigma ($\beta = -.03$, $t = .29$, $p = .772$) and personal psychotherapy use ($\beta = .12$, $t = 1.49$, $p = .139$) were not.

Finally, we hypothesized that perceived public stigma for seeking psychotherapy would have an indirect effect on referral likelihood via self-stigma and then attitudes toward psychotherapy; an exploratory model predicting likelihood of seeking personal psychotherapy was also tested. The PROCESS macro v3.1 for SPSS (Hayes, 2017) was used to test indirect effects (5,000 bootstrap samples). Using this method, indirect effects with confidence intervals that do not include zero are considered significant at the $p < .05$ level. The indirect effect of perceived public stigma on referral likelihood through self-stigma and then attitudes was non-significant (Estimate = -.01, 95% CI: [-.034, .007]). However, the indirect effect through attitudes as a single mediator was significant (Estimate = -.06, 95% CI: [-.149, -.012]; see top panel of Figure 1). The indirect effect of perceived public stigma on likelihood to seek personal psychotherapy through self-stigma and then attitudes was also non-significant (Estimate = -.01, 95% CI: [-.044, .010]), but the indirect effect though attitudes as a single mediator was (Estimate = -.08, 95% CI: [-.181, -.027]; see the bottom panel of Figure 1).

Discussion

This study had three principle aims: (1) to test the effect of a brief video intervention on PCPs' and healthcare students' likelihood of referring a depressed vignette patient to psychotherapy, (2) to test the intervention's effects on potential attitudinal barriers to referral, and (3) identify attitudinal predictors of referrals. Intervention effects and predictors relating to participants' likelihood to seek personal psychotherapy and medication for depression were also explored. We found that, after controlling for gender and a history of personal psychotherapy use, the intervention had no significant effect on referral likelihood or likelihood of seeking

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personal psychotherapy, though likelihood of seeking medication was lower in the intervention group. In addition, the intervention had no significant effect on hypothesized attitudinal predictors of referrals (perceived public stigma, self-stigma, and attitudes toward seeking psychotherapy). In terms of predictors, only gender and attitudes accounted for unique variance in referral likelihood and likelihood of seeking personal psychotherapy. When the mediation model was tested, there was a significant indirect effect of perceived public stigma on referral likelihood and likelihood to seek personal psychotherapy via attitudes toward psychotherapy.

As this was the first study to test attitudinal barriers of referrals to psychotherapy, it is difficult to draw direct comparisons with previous research. However, the lack of effect of the intervention on any dependent variable (referral, personal psychotherapy, attitudes, etc.) after controlling for gender and history of personal psychotherapy use was unexpected in light of similar interventions with other populations (Demyan & Anderson, 2012; Gallo et al., 2015). In fact, the same intervention video used in this study led to greater preferences for psychotherapy and lower perceived public stigma in a national U.S. sample (Brecht et al., 2017). It could be that in this sample, previous training in mental healthcare and/or exposure to individuals with mental health concerns rendered treatment preferences and attitudes less amenable to change.

On the other hand, the mediation models were partly consistent with previous findings. Perceived public stigma had an indirect effect on referral likelihood and likelihood of personal psychotherapy through attitudes. This suggests that PCPs' personal attitudes toward psychotherapy play a role in their decisions on patient care. No previous research has tested this, but it is consistent with findings from another study (e.g., Verdoux et al., 2014) showing that PCPs' personal use of psychotherapy is related to their referral decisions. However, the mediation models were also surprising in that self-stigma did not significantly predict attitudes

after controlling for the other predictors. The non-significant role of self-stigma was inconsistent with the hypothesis that predicted decreases in self-esteem from seeking help are ultimately responsible for perceived public stigma's effect on attitudes (Vogel et al., 2009). The reason for this result is unclear, but perhaps other factors, such as fear of being stigmatized by colleagues for seeking psychotherapy, have a larger impact than self-stigma on PCPs' and healthcare students' attitudes. Indeed, stigmatizing views of individuals with mental health concerns were found among healthcare professionals and students (Janouskova et al., 2017).

Limitations

A number of limitations should be considered when interpreting the results of this study. First, limitations with generalizability should be considered. Although clinical vignettes have been used previously in research (e.g., Alvidrez & Arean, 2002), it is unknown how well these generalize to actual practice. In reality, many factors influence referral decisions that are difficult to replicate in a brief vignette, such as information about patient preferences, comorbid conditions, past courses of treatment, healthy or unhealthy coping strategies, insurance coverage, ability to travel to regular psychotherapy appointments, etc. Further, it is unclear how our results would have differed if the presenting concerns of the vignette patient were different from depression. Referrals may be more likely for more complex conditions, such as eating disorders, substance use disorders, or chronic depressive disorders with multiple comorbidities (Copty & Whiteford, 2005). Further, demand characteristics may influence responses in artificial vignette tasks. Taken together, future research could make efforts to account for contextual factors to increase the ecological validity of measures of PCP referrals.

An additional limitation of the current study is that the intervention was not masked from participants. Some (Demyan & Anderson, 2012; Gallo et al., 2015), but not all (Brecht et al.,

2017), previous interventions have attempted to do this. Knowledge of the purposes of the study and the clear direction of the intervention video may have biased responding on the vignette task and measures of attitudinal barriers. Masking the study purpose was difficult in this population due to time constraints, but future studies could attempt to blind participants to study purposes to the extent possible. In addition, it is possible that our study attracted PCPs and students who had particularly positive opinions of psychotherapy to begin with, which may limit the generalizability of these results. Alternatively, the recent emphasis on interprofessional collaboration and behavioral health integration within medical settings and medical training programs (Kashner et al., 2017; Vogel et al., 2017) could have led to increases in positive attitudes toward psychotherapy among healthcare providers more broadly in comparison with previous samples (e.g., Alvidrez & Arean, 2002). In any case, participants in our sample did endorse low levels of stigma and highly positive attitudes, which may have diminished our ability to detect a significant difference between groups.

Future Directions

In the future, interventions could attempt to take a more wholistic approach to increasing psychotherapy referrals. For example, addressing practical and attitudinal barriers together could have a stronger influence in actual practice settings. In particular, encouraging a culture of positive attitudes toward psychotherapy in primary care clinics while also making structural changes that facilitate referrals (e.g., on-site integration of care coordinators and/or behavioral healthcare providers) may be effective. Such measures have resulted in higher referral rates and improved outcomes for some conditions, especially depression, in other studies (Upshur & Weinreb, 2008; Vogel et al., 2017). Future research in this area could explicitly test whether attitudinal barriers are also affected through such efforts.

Future research could also use mixed methods designs to elicit PCPs' rationale for their referral decisions in vignette tasks. This could highlight additional referral barriers that may be missing from the literature. In particular, this might provide insight into why women are more likely to refer than men even when they do not differ on some attitudinal variables. Qualitative studies in individual clinics might also provide tailored recommendations that have larger effects than those derived from broad, cross-clinic studies (i.e., referral barriers may vary by clinic). Partnerships between researchers and clinic administrators may facilitate this process.

Conclusions

This study tested whether a brief video intervention would result in higher likelihood of referral to psychotherapy and lower attitudinal barriers to referrals among PCPs and healthcare students. Attitudinal predictors of referrals were also tested, and exploratory analyses regarding likelihood of personal psychotherapy and medication use were conducted. We found that the intervention had no effect on referral likelihood, likelihood of personal psychotherapy use, or on attitudinal variables after controlling for gender and history of personal psychotherapy use. However, perceived public stigma for seeking psychotherapy had an indirect effect through attitudes on referral likelihood and likelihood of seeking personal psychotherapy. This indicates that attitudinal variables can exert an influence not only on PCPs' decisions about their personal mental healthcare, but also on their decisions about recommendations for patients. Receiving a referral can have a significant impact on patients' attitudes toward seeking psychotherapy (Hornik-Lurie et al., 2014). As such, it is important that PCPs' referrals are driven by patients' characteristics and needs, and by evidence for the relative efficacy of pharmacological and psychotherapeutic interventions, rather than by providers' personal attitudes or characteristics. It should be noted, though, that participants in this study generally endorsed high likelihood of

referral and low levels of attitudinal barriers. However, this is discrepant with low rates of referrals reported in actual practice (Kravitz et al., 2006). In the future, effects of attitudinal barriers should be tested in actual primary care settings. If such barriers do impact referral decisions, methods of addressing these barriers should continue to be tested. Doing so may optimize outcomes among primary care patients seeking help for mental health concerns.

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Table 1

Descriptive statistics and zero-order correlations for main study variables

Variable	$M(SD)$	2	3	4	5	6	7
1. Self-Stigma	1.75(.80)	.47***	-.23**	-0.09	0.04	-.23**	0.01
2. Perceived Public Stigma	2.17(.71)	--	-.35***	-0.01	0.11	-.19*	-.19*
3. Attitudes	6.13(1.24)		--	0.18*	0.05	.31***	0.16
4. Likelihood of Psychotherapy Referral	6.33(.98)			--	0.00	.40***	-0.07
5. Likelihood of Prescribing Antidepressant	5.24(1.52)				--	-.17*	.51***
6. Likelihood of Personal Psychotherapy	5.54(1.47)					--	-0.05
7. Likelihood of Personal Antidepressant	4.17(1.96)						--

Note. Ranges of possible scores on each measure are as follows: Self-Stigma (1-5); Perceived

Public Stigma (1-5); Attitudes (1-7); Likelihood of Psychotherapy Referral, Prescribing

Antidepressant, Personal Psychotherapy, and Personal Antidepressant (1-7).

***$p < .001$, **$p < .01$ and *$p < .05$.

Table 2

Results of ANCOVAs testing for intervention effects when controlling for gender and history of

personal psychotherapy use

Dependent Variables	Control ($n = 74$) $M(SD)$	Intervention ($n = 80$) $M(SD)$	F	p	η_p^2
Self-Stigma	1.84(.83)	1.65(.76)	2.38	0.125	0.02
Perceived Public Stigma	2.23(.74)	2.09(.67)	2.21	0.149	0.01
Attitudes	6.03(1.37)	6.19(1.21)	0.67	0.414	0.01
Likelihood of Psychotherapy Referral	6.46(.84)	6.22(1.10)	2.15	0.145	0.01
Likelihood of Prescribing Antidepressant	5.27(1.50)	5.21(1.55)	0.08	0.779	0.00
Likelihood of Personal Psychotherapy	5.70(1.35)	5.36(1.58)	1.83	0.178	0.01
Likelihood of Personal Antidepressant	4.49(1.90)	3.82(1.98)	4.47	0.036	0.03

Figure 1

Mediation models for likelihood of referral and personal psychotherapy use
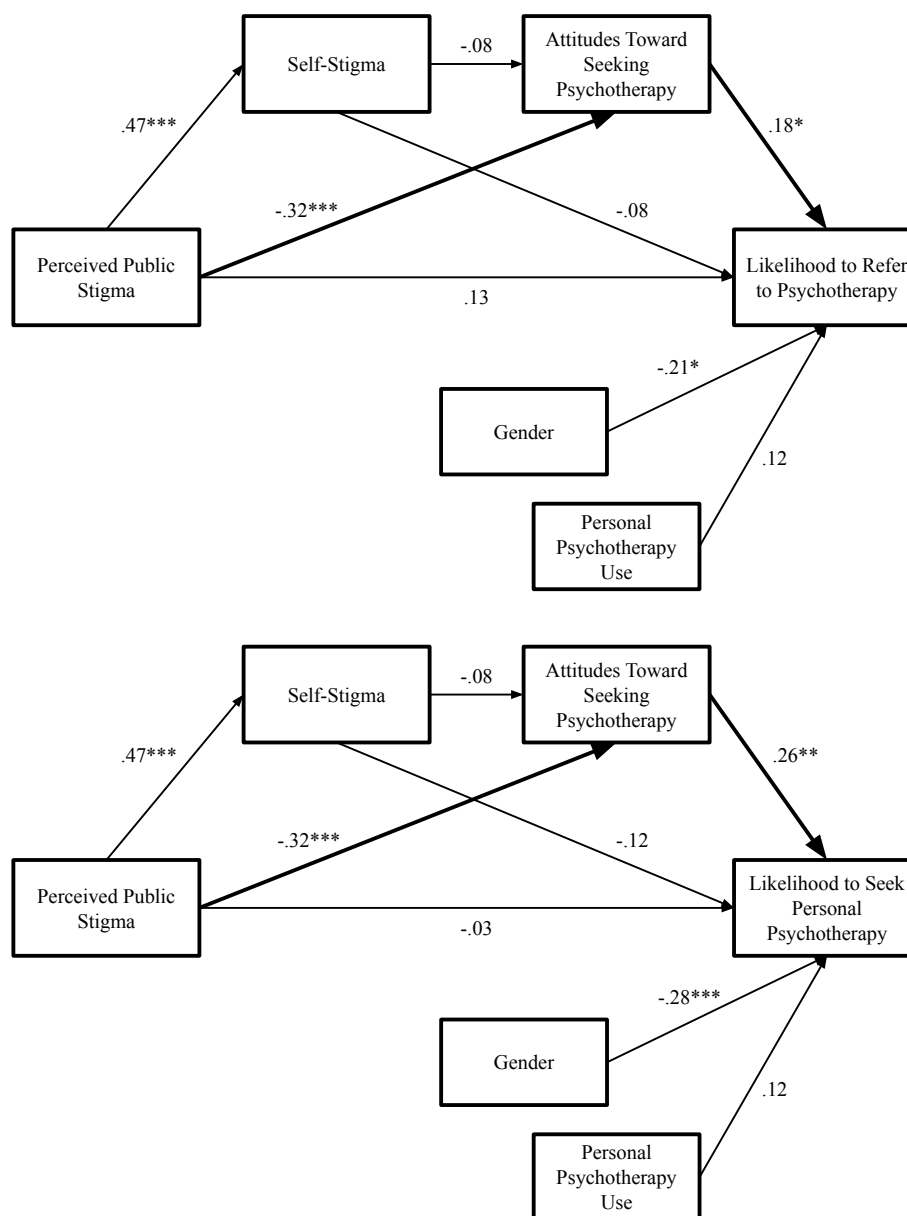
Note. There were significant indirect effects of perceived public stigma on likelihood to refer to psychotherapy (top panel) and on likelihood to seek personal psychotherapy (bottom panel) through attitudes toward seeking psychotherapy. The paths of the indirect effects are indicated by the bolded arrows.