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Predictors of Client Distress at a University Counseling Center

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## Abstract

Brigham Young University's on-campus counseling center keeps thorough archival data, including reports from the 45-item Outcome Questionnaire (OQ-45), which clients complete before each session. We attempted to address questions about who comes to therapy at the Counseling and Psychological Services center (CAPS), why they come, and how they fare. We hypothesized that seven presenting concerns (distress due to perfectionism; confusion about religious beliefs and values; marital/dating and relationship concerns; racial, ethnic or gender discrimination; sexual concerns; sexual orientation or identity; and pornography) would predict clients' initial overall distress score on the OQ-45 (hypothesis 1), clients' final overall distress score on the OQ-45 (hypothesis 2), and the change in overall distress score between the first and final OQ-45 administrations (hypothesis 3). Multiple regression analyses with 6,369 client records revealed widespread statistical significance but small effect sizes. Two predictors stood out among the seven: perfectionism and confusion about religious beliefs or values. The impacts of university culture and other factors are discussed. More research is needed to examine CAPS archival data more thoroughly.

*Keywords:* counseling center, university, predictors, distress, Provo, Utah

### Predictors of Client Distress at a University Counseling Center

The Brigham Young University (BYU) Counseling and Psychological Services center (CAPS) in Provo, Utah, offers a variety of resources for students, from individual therapy and couples counseling to groups centered on pre-marital counseling, disordered eating, and self-compassion. Clients range from teenagers who are living away from parents for the first time to nontraditional students who balance a busy family life with demanding schoolwork. All CAPS clients complete questionnaires before intake and each subsequent session, including the 45-item Outcome Questionnaire (OQ-45; Lambert et al., 2004) and CAPS items about demographics and specific client concerns. These surveys enable CAPS staff to monitor client progress, assess areas of distress, and direct clinicians' preparation for sessions. CAPS archival data contain demographic variables and survey responses that might aid clinicians, administrators, and researchers in understanding who seeks therapy at the counseling center, why they come, and how they fare. We hypothesized that:

1. Client ratings of seven presenting concerns would predict initial distress when starting therapy (first overall distress score on the OQ-45).
2. Client ratings of seven presenting concerns would predict distress at last therapy appointment (last overall distress score on the OQ-45).
3. Client ratings of seven presenting concerns would predict improvement (change in OQ score).

### Method

We requested a subset of CAPS archival data, including person variables, coded identifiers, and OQ-45 scores. We included 10 variables in this study: seven presenting concerns and three outcome variables. We prepared our data for analysis by removing records missing

OQ-45 or predictor data and those with obvious errors, such as a GPA greater than 4. Our trimmed dataset included 6,369 records from clients aged 17 to 62 years and spanning from January 1, 2014, to December 31, 2019. After preparing the file to be analyzed in Statistical Analysis Software (SAS), we ran multiple regression analyses to test our hypotheses.

The seven predictor variables came from CAPS intake paperwork. The forms prompt clients to rate their distress on a five-point Likert scale (*none* to *a great deal*) in regards to each of multiple specific presenting concerns. We selected seven presenting concerns for our analysis, including “marital/relationship or dating concerns,” “confusion about religious beliefs or values,” “gender, ethnic, or racial discrimination,” “perfectionism,” “sexual concerns,” “sexual orientation or identity,” and “pornography. These self-reports result in quantitative measures of the seven selected presenting concerns, with 0 representing no distress/*none* and 4 representing *a great deal* of distress.

The three outcome variables come from OQ-45 data and include first overall distress score, last overall distress score, and the change in overall distress score (which we called improvement). The OQ-45 contains 45 items, 36 of which describe symptoms or complaints, such as feeling blue or having frequent headaches, and nine of which describe well-being, such as feeling happy and satisfied with one’s work. Clients rate each item based on how frequently they experienced it in the preceding week, with responses ranging from *Never* to *Almost always* on a five-point Likert scale. The questionnaire produces four scores, three subscale scores (Interpersonal Relations, Symptom Distress, and Social Role functioning) as well as the overall distress score (Nissen-Lie et al., 2016). Higher OQ scores represent higher distress, and lower scores indicate lower distress. A positive improvement score  $x$ , then, indicates that a client’s final overall distress score was  $x$  points *lower* than his/her initial overall distress score; a negative

improvement score indicated that a client reported *more* distress later in therapy than he/she initially reported. Mondragon (2012) explains that the clinical cutoff for OQ-45 overall distress score is 63, meaning that a score that falls below that cutoff represents what is considered sub-clinical distress, whereas a score above that cutoff indicates more severe (or clinical) distress. In addition, the OQ-45's Reliable change index (RCI) is 14 points; therefore, an improvement score of 14 or -14 indicates a reliable change in either direction, whereas an improvement score between -14 and 14 does not (Mondragon, 2012).

### Results

The age range of the sample reflected mostly but not entirely traditional young adult university students. The average initial distress fell slightly above the clinical cutoff for the OQ-45 ( $M=67.78$ ) but displayed wide variability ( $SD=24.48$ ). Average distress at the clients' final completion of the OQ-45 survey was slightly lower, although still above the clinical cutoff ( $M=64.24$ ) and still with wide variability ( $SD=22.85$ ). Between the two administrations, improvement averaged 3.55 points on the OQ-45 for the entire sample, again with significant variation ( $SD=21.302$ ). The presenting concerns with the highest average rating of distress were perfectionism and marital/relationship and dating concerns, followed distantly by confusion about religious beliefs or values. See Table 1 for the mean, standard deviation, and sample size of each predictor and outcome variable.

**Table 1**

#### *Descriptive Statistics*

	Mean	Std. Deviation	N
Initial OQ overall distress score	67.78	24.480	6369
Initial distress due to:			
Perfectionism	2.46	1.311	6369

Confusion about religious beliefs or values	.91	1.227	6369
Marital/dating and relationships concerns	2.42	1.364	6369
Racial, ethnic, or gender discrimination	.26	.711	6369
Sexual concerns	.82	1.274	6369
Sexual orientation or identity	.25	.821	6369
Pornography	.70	1.306	6369
Last OQ overall distress score	64.24	22.848	6369
Final distress due to:			
Perfectionism	2.46	1.311	6369
Confusion about religious beliefs or values	.91	1.227	6369
Marital/dating and relationship concerns	2.42	1.364	6369
Racial, ethnic, or gender discrimination	.26	.711	6369
Sexual concerns	.82	1.274	6369
Sexual orientation or identity	.25	.821	6369
Pornography	.70	1.306	6369
Improvement	3.55	21.302	6369

We conducted multiple regression analyses to test our hypotheses. Our predictors were the seven selected presenting concerns, and our dependent variables were initial overall distress score on the OQ-45, final overall distress score on the OQ-45, and the difference between those scores (improvement). Tables 2, 3, and 4 show the results of our regression analyses for all three dependent variables.

### **Hypothesis 1**

Our first hypothesis was that client responses about the seven presenting concerns would predict initial distress when starting therapy. The multiple regression with all seven presenting concerns as predictors and “OQfirst” as the dependent variable produced statistically significant

results with a small effect size,  $F_{(7, 6361)}=149.87$ ,  $p<.0001$ ,  $R^2=0.14$ . When we conducted regressions with individual presenting concerns as predictors and “OQfirst” as the dependent variable, two indicated statistical significance *and* noteworthy effect sizes (defined here as  $R^2\geq 0.04$  or  $\beta\geq .10$ ): distress related to perfectionism and confusion about religious beliefs or values.

## **Hypothesis 2**

Our second hypothesis was that client responses to the seven selected presenting concerns would predict distress at last therapy appointment. The multiple regression with all seven presenting concerns as predictors and “OQlast” as the dependent variable produced statistically significant results with a small effect size,  $F_{(7, 6361)}=91.885$ ,  $p<.0001$ ,  $R^2=0.09$ . When we conducted regressions with individual presenting concerns as predictors and “OQlast” as the dependent variable, all except sexual orientation or identity produced statistically significant results ( $F>1$ ,  $p<.05$ ) but only two achieved statistical significance *and* noteworthy effect sizes (defined here as  $R^2\geq 0.04$  or  $\beta\geq .10$ ): distress related to perfectionism and confusion about religious beliefs or values.

## **Hypothesis 3**

Our third hypothesis was that client responses on the seven presenting concerns would predict improvement. The multiple regression with all seven presenting concerns as predictors and improvement as the dependent variable produced statistically significant results with a very small effect size,  $F_{(7, 6361)}=11.95$ ,  $p<.0001$ ,  $R^2=0.01$ . When we conducted regressions with individual presenting concerns as predictors and improvement as the dependent variable, none produced statistically significant results *and* noteworthy effect sizes (defined here as  $R^2\geq 0.04$  or  $\beta\geq .10$ ).



## Discussion

BYU's Counseling and Psychological Services center serves thousands of students every year. Since each student brings individual presentations to therapy, CAPS staff see a variety of clients. Some common patterns prompt CAPS staff to lead relevant groups, such as the "body image and eating concerns," "reconciling faith and sexuality," and "compassion focused therapy" groups. Other common presentations linger as anecdotes, such as the presentation of students whose OQ-45 distress scores are subclinical (suggesting that they are coping well and are not in severe distress) but who are in reality extremely upset about one specific issue. These anecdotes and the larger endeavor of psychotherapy outcome research lend import to a study of who comes to a university counseling center, why they come, and how they fare.

In an attempt to address these questions, we used multiple regression analyses to take a first glance at CAPS archival data. We hypothesized that seven presenting concerns measured by CAPS intake paperwork would predict improvement, initial distress when starting therapy, and final distress score at the client's last session. Although most of our analyses resulted in statistical significance, our hypotheses were not supported. This is because our analyses produced impressive statistical significance but minor effect sizes. Statistical significance is affected by sample size, with a very large sample tending to produce statistical significance. Since our sample size was large ( $N=6,369$ ), statistical significance followed easily (usually  $p<.001$ ). However, effect size, a measure of the magnitude of a relationship between variables, is not influenced by sample size. Effect sizes range from small ( $R^2=0.04$  or  $\beta=0.10$ ) to perfect ( $R^2=\pm 1.0$  or  $\beta=\pm 1.0$ ). Hypothesis 1 yielded statistical significance but a modest effect size ( $F_{(7, 6361)}=149.87$ ,  $p<.0001$ ,  $R^2=0.14$ ). Hypothesis 2 yielded statistical significance but an even smaller effect size ( $F_{(7, 6361)}=91.885$ ,  $p<.0001$ ,  $R^2=0.09$ ). Hypothesis 3 yielded statistical significance but

the smallest effect size of the three ( $F_{(7, 6361)}=11.95$ ,  $p<.0001$ ,  $R^2=0.01$ ). This is likely because all three dependent variables, especially improvement in therapy, are impacted by many variables outside the scope of this study, such as personality variables. Thus, a first glance at the data yielded only a few meaningful insights, namely that no effects exist for most of the regressions and that minor effects exist for a few of the regressions.

Although effect sizes were small, some regressions do offer interesting insights. For example, the strongest relationships appear between the seven selected presenting concerns and the initial distress score (“OQfirst”). Two of the areas of distress are of special note: “confusion about religious beliefs or values” and “perfectionism.” These two areas also stand out among the predictors of “OQlast” and improvement. The “OQfirst” regression with “confusion about religious beliefs or values” yielded unsurprising statistical significance and a small effect size, which means that little of the variance on initial OQ-45 scores can be accounted for by a client’s distress about his/her religious beliefs and values. This subtle association might have something to do with BYU’s population. BYU is a private religious university, and students who claim both the university and its parent religious organization are required to be active in their church and renew yearly a personal endorsement by an ecclesiastical leader. Thus, students who question their religious beliefs and values while embedded in a deeply religious and somewhat unyielding culture might experience higher psychological distress than expected of other students in other locales and cultures.

A similar or perhaps mirrored pattern is visible with “OQfirst” and perfectionism ( $R^2=0.07$ ,  $\beta=0.26$ ). Because BYU boasts prestigious programs, renowned educators, subsidized tuition, and a religion-specific honor code, competition for admission is high. Students who lead lives of perfectionism often bring the grades, extra-curricular involvement, and dogged work

ethic necessary to gain acceptance to the school. Students with patterns of perfectionism might push themselves to excel in all aspects of their lives, and the combination of perfectionism and the extra demands and opportunities of young adulthood might lead some students to CAPS. It is not surprising that perfectionism is related to distress, and BYU seems to attract perfectionistic students. This context might shed light on why perfectionism and confusion about religious beliefs stand out among the predictors of distress in a BYU sample.

On the other hand, even with such a large sample, some regressions yielded both no/negligible effects *and* no statistical significance. These include sexual concerns, sexual orientation, and pornography. These variables are especially interesting because of BYU's population. BYU's mostly religious student body carries a history of stigma against perceived deviations from social/religious norms. Thus, similar to confusion about religious beliefs or values, it is reasonable that clients' sexual concerns, concern about sexual orientation or identity, or concern about pornography use might be multiplied by their membership in BYU's student body. Unusual for this study, these variables not only yielded no/negligible effects but also failed to achieve statistical significance in some cases. One possible explanation is that the data might be misleading or unable to capture these clients' distress because of self-screening or response bias. For example, because BYU students must agree to an honor code prohibiting substance use, few students who intend to use alcohol or drugs apply for or attend BYU. Those who do attend and then seek counseling services might temper their responses to CAPS intake items about substance use because substance use is prohibited at the university. A similar pattern is possible with sexual concerns, concern about sexual orientation or identity, and concern about pornography use; clients may avoid BYU or withhold truthful responses on CAPS intake forms out of embarrassment, shame, or fear.

A second possible explanation for consistently weak results among the presenting concerns related to sexual concerns, sexual orientation or identity, and pornography is conceptual overlap or collinearity. A correlation matrix reveals that the sexual concerns item correlates with the marital/relationship or dating concerns item ( $r=0.23$ ), the sexual orientation or identity concerns item ( $r=0.27$ ), and the pornography concerns item ( $r=0.40$ ). Although these correlations are small, these items might capture similar phenomena. This correlation or overlap might dilute the predictive power of any single item and explain why the three items related to sexual concerns do not stand alone in predicting overall distress. Last, a third possible explanation for the missing data is that CAPS intake paperwork might not include the item about pornography anymore.

Finally, taken together, all seven selected presenting concerns account for only 14% of the variance in initial distress score (“OQfirst”), 9% of the variance in final distress score (“OQlast”), and 1% of the variance in improvement (“improvement”). That is, 86% of the question about why students come to therapy is unanswered by this analysis, and 99% of the question about why students improve/do not improve in therapy is unanswered by this analysis. Future research might consider other predictors of client distress and improvement. For example, CAPS intake forms also record demographics information, self-reported GPA, the college to which the student’s major belongs, housing arrangements, previous trauma, extra-curricular involvement, work hours, military affiliation, religion’s importance to the student, self-injury and suicidality, family support, and social support. These data, as well as more sophisticated statistical procedures, might offer more illumination about CAPS clients.

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## Tables

Table 1

*Descriptive statistics*

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Pornography	.70	1.306	6369
Improvement	3.55	21.302	6369

Table 2

*Multiple regression coefficients for initial OQ score*

model	B	Std. Error	$\beta$	t	Sig.	Adjusted R Square	R Square Change	F Change
(Constant)	48.692	.777		62.674	.000			
Perfectionism	4.370	.219	.234	19.966	.000	.0673	.0674	460.366
Confusion about religious beliefs or values	4.144	.249	.208	16.609	.000	.1246	.0575	418.103
Marital/dating and relationship concerns	1.483	.216	.083	6.877	.000	.1324	.0079	58.120
Racial, ethnic, or gender discrimination	2.908	.417	.085	6.980	.000	.1393	.0070	52.161
Sexual concerns	.842	.256	.044	3.286	.001	.1400	.0008	6.182
Sexual orientation or identity	-.198	.374	- .007	-.529	.597	.1400	.0001	.434
Pornography	-.587	.240	- .031	-2.451	.014	.1406	.0008	6.007

*Note.* B= unstandardized regression coefficient;  $\beta$ = standardized regression coefficient

Table 3

*Multiple regression coefficients for final OQ score*

model	B	Std. Error	$\beta$	t	Sig.	Adjusted R Square	R Square Change	F Change
(Constant)	50.097	.746		67.168	.000			
Perfectionism	2.987	.210	.171	14.214	.000	.0373	.0374	247.550
Confusion about religious beliefs or values	3.043	.240	.163	12.704	.000	.0767	.0396	273.214
Marital/dating and relationship concerns	1.242	.207	.074	5.999	.000	.0831	.0065	45.299
Racial, ethnic, or gender discrimination	2.528	.400	.079	6.322	.000	.0895	.0065	45.771
Sexual concerns	.721	.246	.040	2.932	.003	.0904	.0010	6.980
Sexual orientation or identity	.404	.359	.015	1.124	.261	.0904	.0001	1.039
Pornography	-.464	.230	-.027	-2.019	.044	.0908	.0006	4.076

*Note.* B= unstandardized regression coefficient;  $\beta$ = standardized regression coefficient



Table 4

*Multiple regression coefficients for improvement*

model	B	Std. Error	$\beta$	t	Sig.	Adjusted R Square	R Square Change	F Change
(Constant)	-1.405	.725		-1.938	.053			
Perfectionism	1.384	.204	.085	6.774	.000	.008	.008	53.063
Confusion about religious beliefs or values	1.101	.233	.063	4.730	.000	.012	.004	24.795
Marital/dating and relationship concerns	.241	.201	.015	1.198	.231	.012	.000	1.576
Racial, ethnic, or gender discrimination	.379	.389	.013	.976	.329	.012	.000	.609
Sexual concerns	.121	.239	.007	.505	.613	.012	.000	.003
Sexual orientation or identity	-.602	.349	-.023	-1.724	.085	.012	.000	3.082
Pornography	-.123	.223	-.008	-.550	.583	.012	.000	.302

*Note.* B= unstandardized regression coefficient;  $\beta$ = standardized regression coefficient