

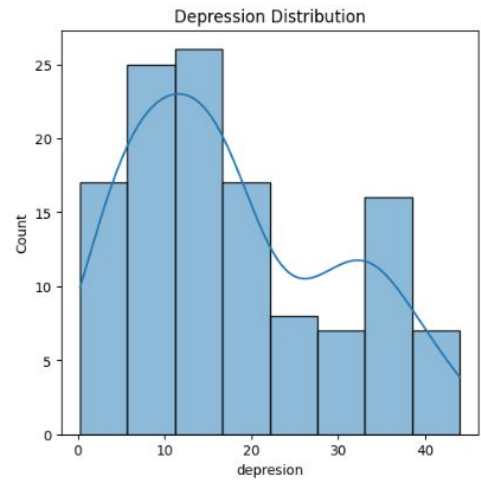
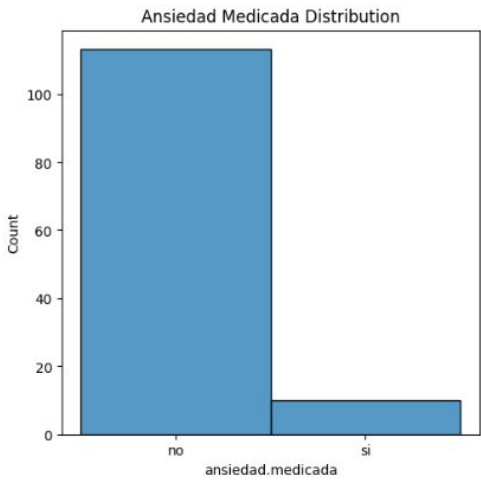
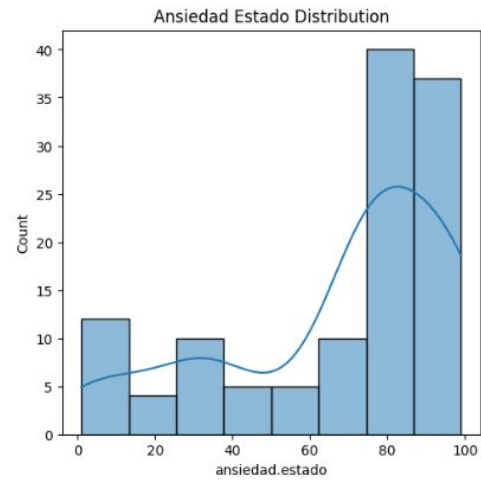
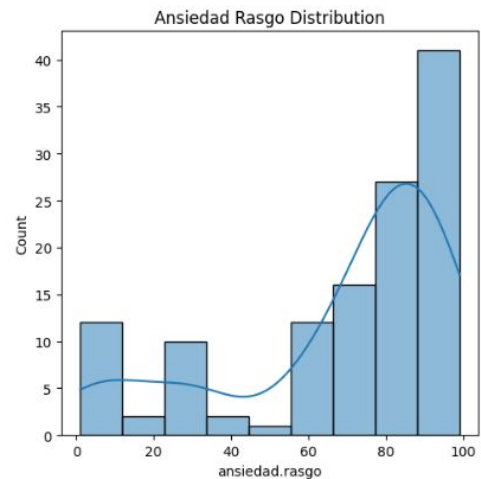
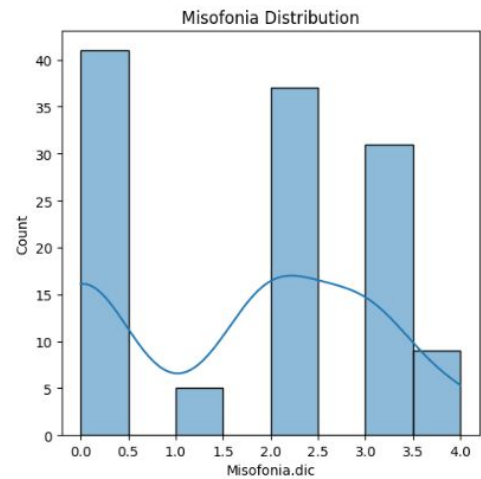
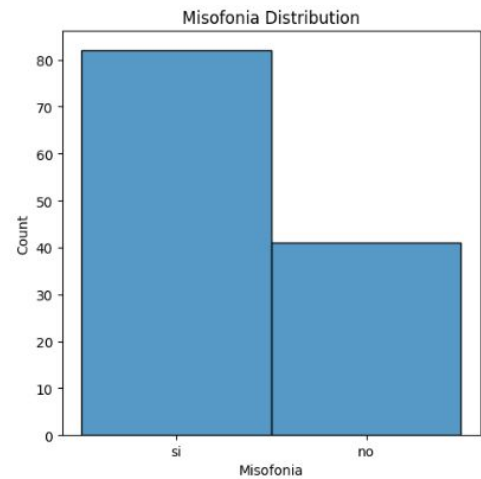
Misophonia Data Analysis

Laia Salvat
Sanjay Rijal

Data Description

- Misofonia: Categorical values (si, no) of misophonia
- Misofonia.dic: Score from 0-4 with misophonia severity
- ansiedad.rasgo: Score from 0-100 with anxiety personality trait
- ansiedad.rasgo.dic: Binary score (0,1) of anxiety personality trait
- ansiedad.estado: Score from 0-100 with current state of anxiety
- ansiedad.estado.dic: Binary score (0,1) with current state of anxiety
- ansiedad.medicada: Diagnosed with anxiety disorder (si, no)
- ansiedad.medicada.dic: Diagnosed with anxiety disorder (1, 0)
- depresion: Score from 0-50 with current state of depression
- depresion.dic: Binary score (0,1) with current state of depression

Data Distribution



Questions

- Which mental health factors significantly influence misophonia?
- Is there any significant interaction between these factors in relation to misophonia?
- Does the misophonia diagnosis also influence these mental health factors?

Methods

Variables:

- `ansiedad.rasgo`, `ansiedad.estado`, `depresion` → **continuous**
- `ansiedad.medicada.dic`, `misofonia.dic` → **discrete**

Tests:

- ANOVA
- Logistic Regression
- Logit Regression with interaction
- Correlation between variables

Results

ANOVA Results for ansiedad.rasgo:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia	1.0	35616.260163	35616.260163	64.033878	8.383930e-13
Residual	121.0	67301.365854	556.209635	NaN	NaN

ANOVA Results for ansiedad.estado:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia	1.0	49059.658537	49059.658537	101.822444	9.607413e-18
Residual	121.0	58299.707317	481.815763	NaN	NaN

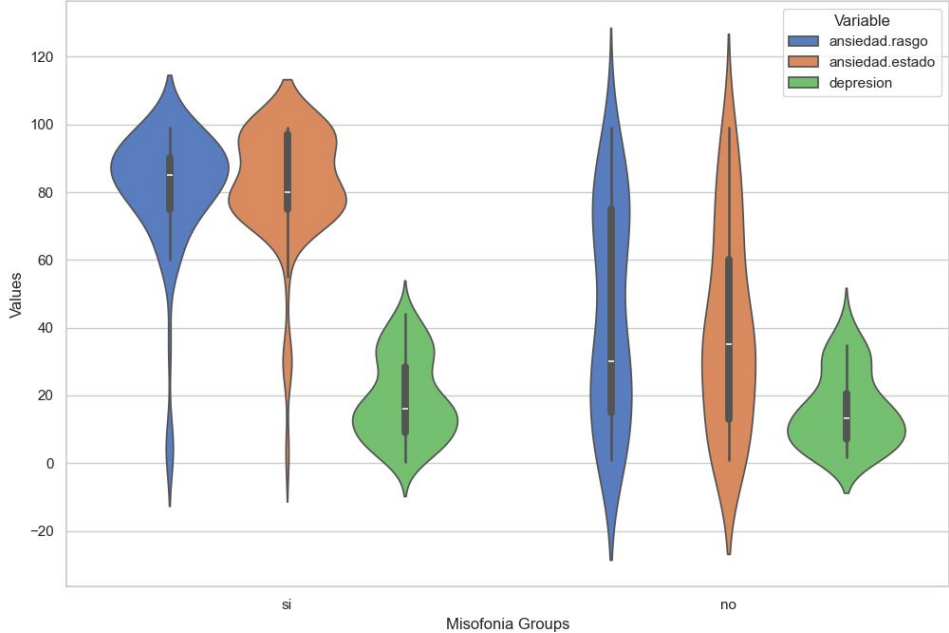
ANOVA Results for depression:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia	1.0	314.818391	314.818391	2.309286	0.131212
Residual	121.0	16495.584713	136.327146	NaN	NaN

ANOVA Results for ansiedad.medicada.dic:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia	1.0	0.199187	0.199187	2.681592	0.104112
Residual	121.0	8.987805	0.074279	NaN	NaN

Violin Plots of Mental Health Factors by Misofonia



Results

ANOVA Results for ansiedad.rasgo:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia.dic	1.0	42392.927060	42392.927060	84.751255	1.254982e-15
Residual	121.0	60524.698956	500.204124	NaN	NaN

ANOVA Results for ansiedad.estado:

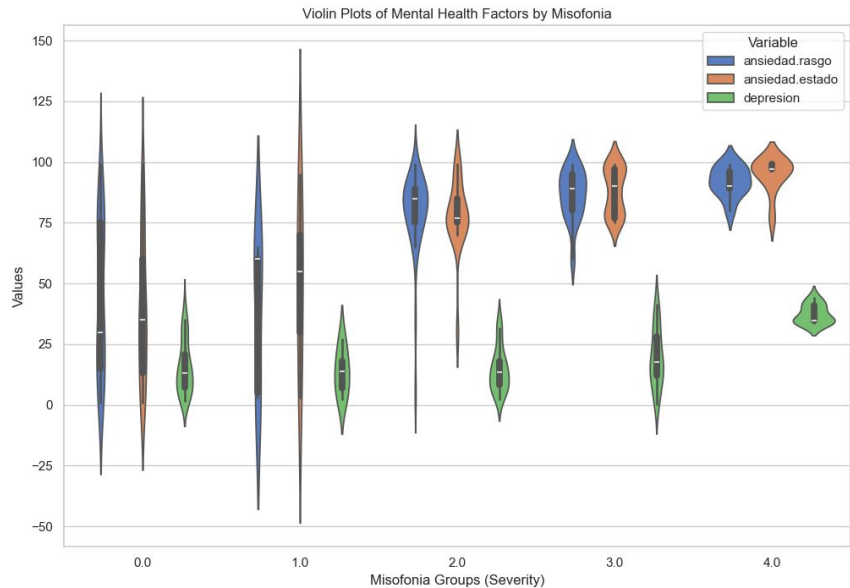
	df	sum_sq	mean_sq	F	PR(>F)
Misofonia.dic	1.0	55075.683139	55075.683139	127.46152	1.249213e-20
Residual	121.0	52283.682715	432.096551	NaN	NaN

ANOVA Results for depression:

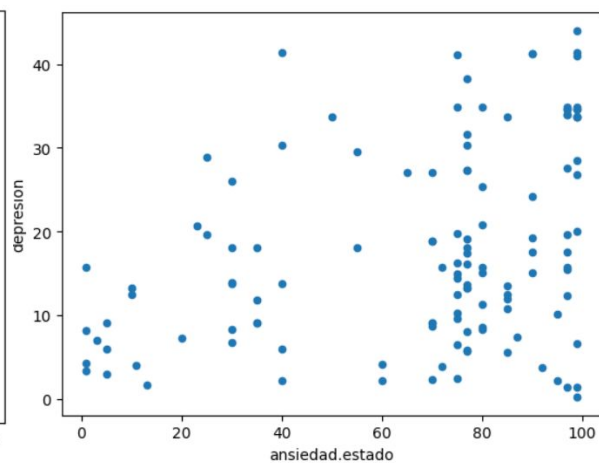
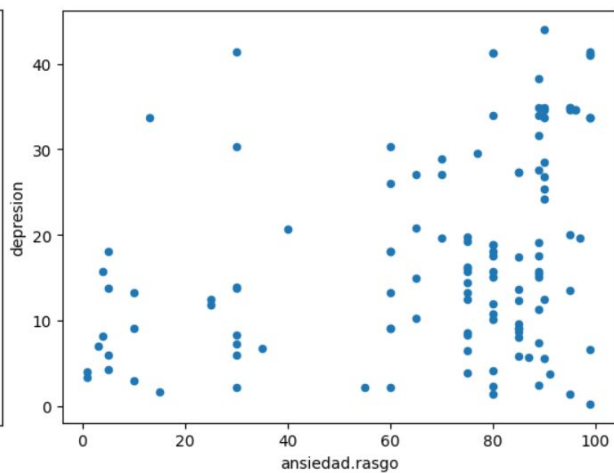
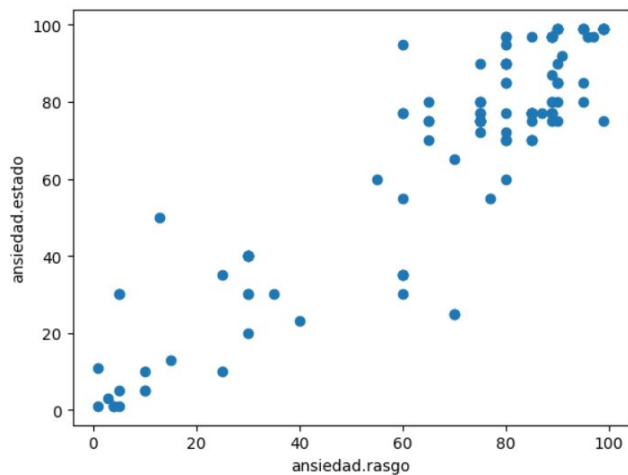
	df	sum_sq	mean_sq	F	PR(>F)
Misofonia.dic	1.0	1669.557526	1669.557526	13.342482	0.000385
Residual	121.0	15140.845578	125.130955	NaN	NaN

ANOVA Results for ansiedad.medicada.dic:

	df	sum_sq	mean_sq	F	PR(>F)
Misofonia.dic	1.0	0.291799	0.291799	3.969299	0.048588
Residual	121.0	8.895193	0.073514	NaN	NaN



Results



Results

Logit Regression Results without Interactions

Dep. Variable:	Misofonia	No. Observations:	123
Model:	Logit	Df Residuals:	118
Method:	MLE	Df Model:	4
Date:	Thu, 03 Oct 2024	Pseudo R-squ.:	0.4289
Time:	09:32:55	Log-Likelihood:	-44.716
converged:	True	LL-Null:	-78.291
Covariance Type:	nonrobust	LLR p-value:	9.060e-14

	coef	std err	z	P> z	[0.025	0.975]
Intercept	-3.3557	0.872	-3.846	0.000	-5.066	-1.646
ansiedad_rasgo	-0.0133	0.022	-0.615	0.538	-0.056	0.029
ansiedad_estado	0.0855	0.025	3.472	0.001	0.037	0.134
depresion	-0.0408	0.025	-1.612	0.107	-0.090	0.009
ansiedad medicada dic	2.0780	1.385	1.500	0.134	-0.637	4.793

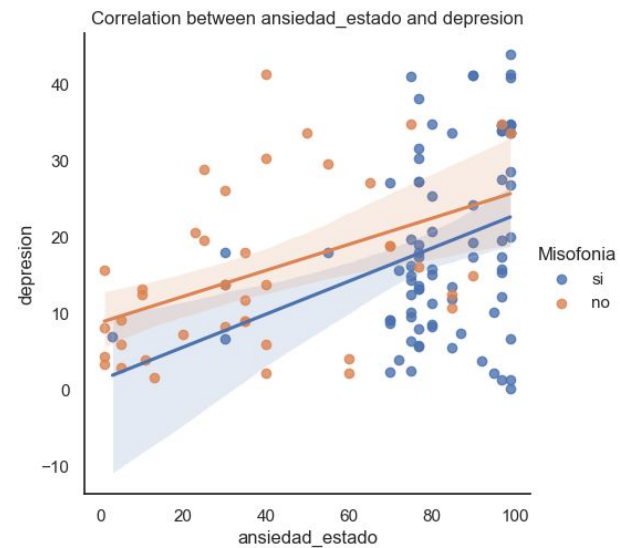
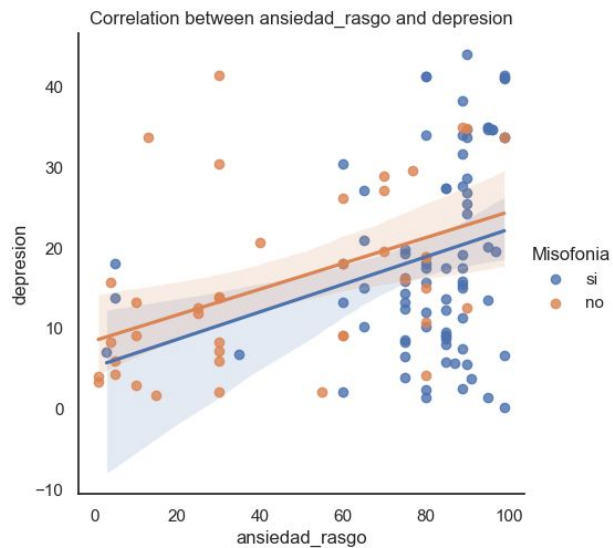
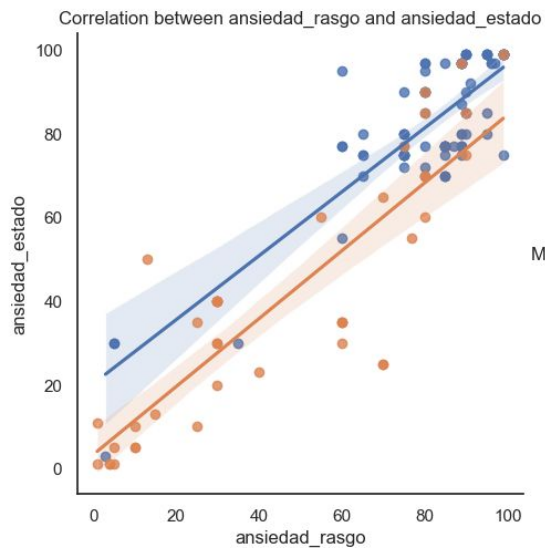
Results

Logit Regression Results with Interactions

Dep. Variable:	Misofonia	No. Observations:	123
Model:	Logit	Df Residuals:	114
Method:	MLE	Df Model:	8
Date:	Thu, 03 Oct 2024	Pseudo R-squ.:	0.4449
Time:	09:32:46	Log-Likelihood:	-43.458
converged:	True	LL-Null:	-78.291
Covariance Type:	nonrobust	LLR p-value:	5.724e-12

	coef	std err	z	P> z	[0.025	0.975]
Intercept	-1.1854	1.727	-0.686	0.493	-4.571	2.200
ansiedad_rasgo	-0.0817	0.063	-1.302	0.193	-0.205	0.041
ansiedad_estado	0.0468	0.063	0.738	0.461	-0.078	0.171
ansiedad_rasgo:ansiedad_estado	0.0010	0.001	1.233	0.217	-0.001	0.003
depresion	-0.1301	0.189	-0.688	0.492	-0.501	0.241
ansiedad_rasgo:depresion	0.0024	0.003	0.772	0.440	-0.004	0.009
ansiedad_estado:depresion	0.0010	0.004	0.239	0.811	-0.007	0.009
ansiedad_rasgo:ansiedad_estado:depresion	-2.894e-05	4.75e-05	-0.609	0.543	-0.000	6.42e-05
ansiedad_medicada_dic	2.2942	1.652	1.389	0.165	-0.943	5.531

Results



Conclusion

- Misophonia has statistically significant impact on the mental health factors like anxiety personal traits and current stage of anxiety but not on misophonia diagnosed and depression.
- Mental health factors and their interactions don't have statistically significant effects on misophonia.