# Visualizing Healthcare Outcomes: A 3D Perspective on Patient Recovery

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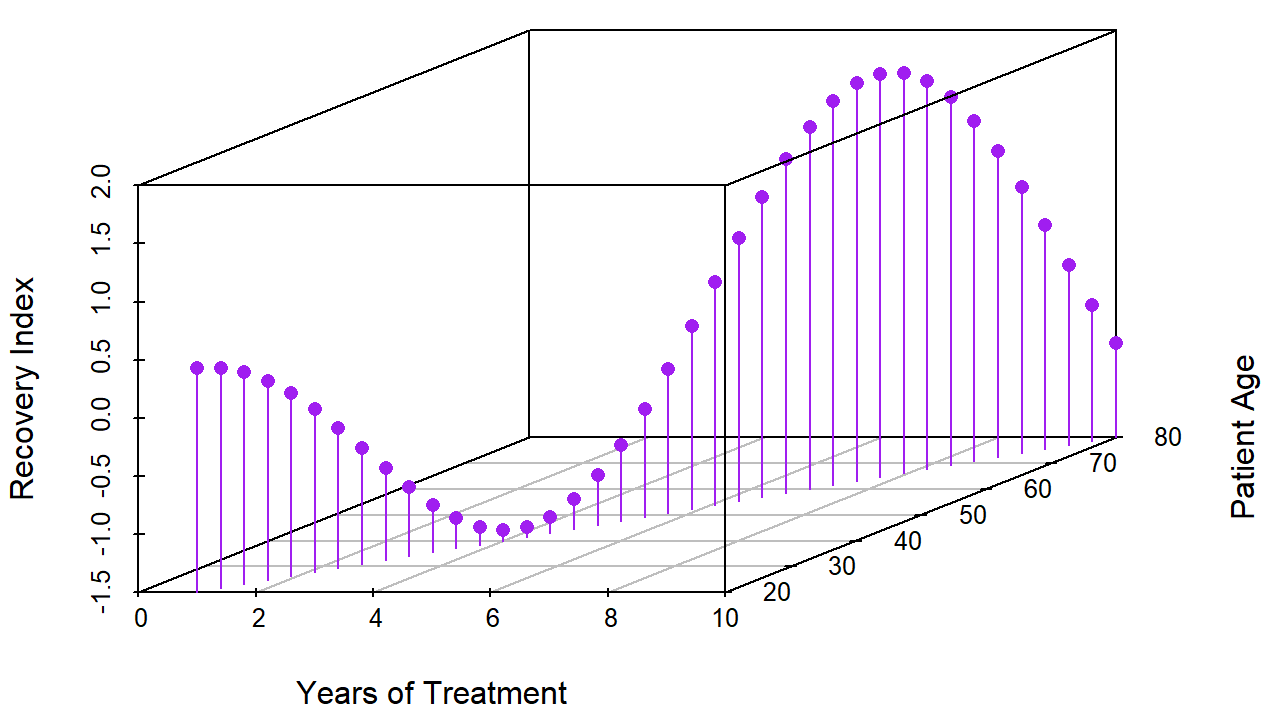
```
# I decided to load the "scatterplot3d" R package because it provides functionality to create am
azing 3D scatter plots. It has the ability to show visualizational relationships between three c
ontinuous variables in a three-dimensional space.
library(scatterplot3d)

# I have decided to utilize a fictitious data set I created for practice purposes in a healthcar
e setting
set.seed(123)
n <- 40
Years_of_Treatment <- seq(1, 10, length.out = n)
Patient_Age <- seq(20, 80, length.out = n)
Recovery_Index <- sin(Years_of_Treatment) + cos(Patient_Age / 10)

# 3D Scatter plot with surface reflecting healthcare data
scatterplot3d(Years_of_Treatment, Patient_Age, Recovery_Index, type = "h", color = "purple", pch
= 16, grid = TRUE,
              main = "3D Scatter Plot of Healthcare Data", xlab = "Years of Treatment", ylab =
"Patient Age", zlab = "Recovery Index")
```



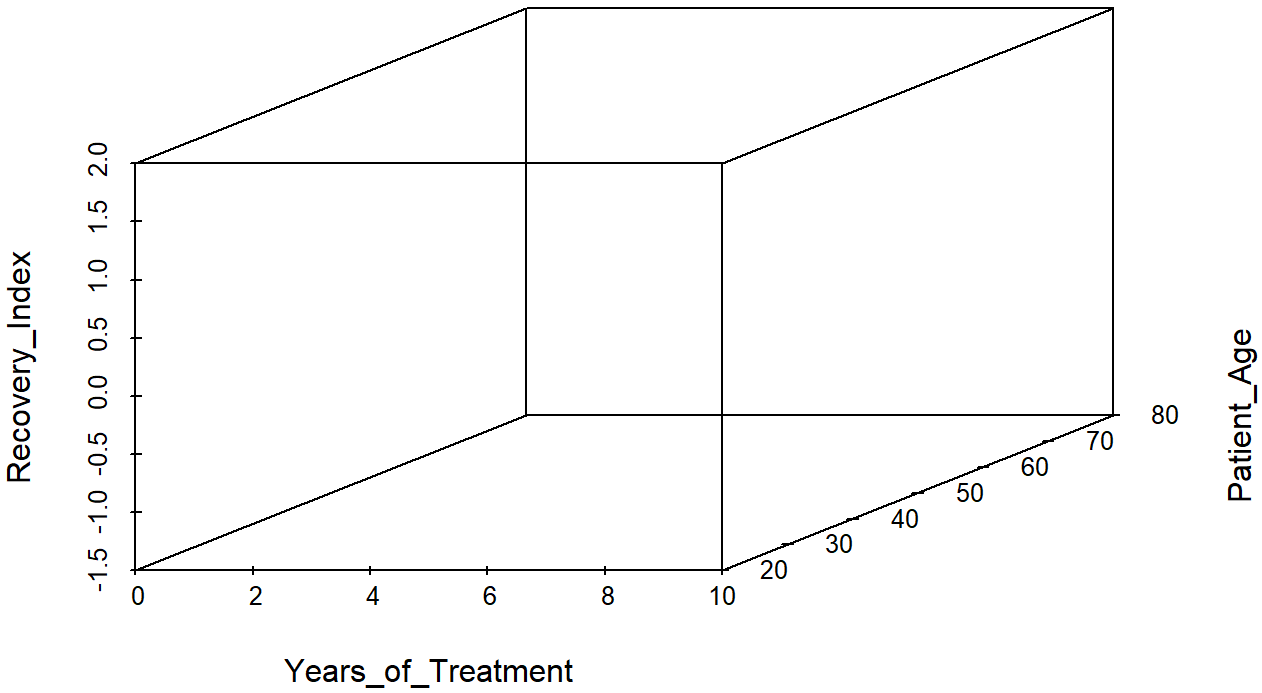

```
# Add a grid/surface with a healthcare theme
s3d <- scatterplot3d(Years_of_Treatment, Patient_Age, Recovery_Index, type = "n", grid = FALSE)
s3d$plane3d(Recovery_Index, Years_of_Treatment, Patient_Age, draw_polygon = TRUE, lty = 1, lwd =
2, col = "red")
```

```
## Warning in x * x.coef: longer object length is not a multiple of shorter object
## length
## Warning in x * x.coef: longer object length is not a multiple of shorter object
## length
```

```
## Warning in (y * y.scal + y.add) * y.coef: longer object length is not a
## multiple of shorter object length
```

```
## Warning in z1 + y * yz.f: longer object length is not a multiple of shorter
## object length
```

```
## Warning in z2 + y * yz.f: longer object length is not a multiple of shorter
## object length
```


Recovery_Index
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
0
2
4
6
8
10
Years_of_Treatment
20
30
40
50
60
70
80
Patient_Age