**STUDY Proposal**

Investigating the effect of variables SS and PS on Variable ALI

Dependent variable: Variable ALI

Independent variable: Variables SS & PS

Covariates: Variables Ag, LOS, C19, Rank, PA

Moderating Variable: SF1, MS1

Independent variable: SS (continuous) & PS (continuous)

Covariates:

Primary: Age , LOS (continuous)

Secondary: C19 (Categorical) , PA(categorical), Rank (categorical)

Dependent variable

ALI (continuous variable)

Moderating variable:

Primary: SF (continuous)

Secondary: MS (continuous)

**Linear mixed models (or suggested best model, maybe simple T-testing especially if the sample size cannot carry the proposed regression model)**

* The main aim here is to investigate if the SS and PS predict the ALI. Also predict change over time. I am open to dropping which ever of the primary predictors don’t do a better job of predicting ALI. So I will suggest you run them independently of each other before considering both together in the same model.
* Secondly we did bivariate analysis to see which of the time 1 or 2 covariates, age, LOS, rank, C19, PA, AIF, and Slp associate with the dependent variable.
* When I initially tried to run both time 1 and 2 measures of all the predictors and covariates, the model couldn’t carry it. So we decided to run time 1 (PS and/or SS), run age and LOS at time 2, run C19 (covid, yes or NO), PA (physical activity), and rank. We didn’t add the other variables because they didn’t correlate with ALI ( Please run this to confirm).
* Based on the best predictors and covariates, we can develop a model that fits and can produce findings.

**Analyses to run**

**First stage.** Data cleaning. checks of data integrity (Preprocessing)

- Test assumptions

- Missing data (amount, patterns)

**Second stage** - Bivariate analysis to investigate associations and potential predictors to add to the regression analysis. Pearson’s, T-testing, and ANOVAs (3-categorical)

**Third stage**

1st stage = Within-subject model = The unconditional means model. Determine the ICC.

2nd stage = Between-subject model = Unconditional growth model.

3rd stage = Regression analysis (here, we will run variables to check for model fit. Most likely, we will end up using phase 1 data to predict changes in the outcome variable due to sample size)

4th stage = Moderation analysis. The primary analysis here is to determine if SF moderates the relationship between PS/SS and ALI. You should run MS also, but if it does not find anything we can remove it from the model.

Interacting terms:

SF1,

MS1

Dependent variable