**Current study**

This exploratory study seeks to investigate the effectiveness of FFT across the COVID-19 pandemic.

RQ1: Was there any differences between groups at admission?

RQ2: Was FFT treatment effective in changing behavioural outcome (objective measure) and risk levels (therapists’ subjective measure) across the COVID-19 pandemic?

RQ3: Which demographic variables and/or treatment conditions were associated with FFT outcome measures?

RQ4: Over the long run, which variables were associated with clients’ growth patterns?

**Methods**

**Participants**

This FFT study sourced its dataset from the Primula database made available by the Norwegian Center for Child Behavioural Development (NUBU). The main objective of FFT is to reduce the risk level associated with the youth (NUBU, 2021). The purpose of Primula is to collect treatment data to apply quality assurance and measurement of long-term effects on the treatment model. Youths between the age of 11 and 18 were referred to the FFT team by the Municipality Child welfare (BUFDIR, 2021). The inclusion criteria for FFT is: a high level of conflict in the family were the parents think that the youth has challenging behavior, parents and youth agree there is communication problems in the family, youth has concerning behaviour at school, end up in conflict with peer or has drug abuse. FFT team excluded clients with any of the following conditions from FFT treatments; 1) lives alone without primary caregiver, b) suicidal, psychotic, or considered a danger for self or others, (c) intellectual ability as the only reason for referral (BUFDIR, 2021). In order to examine the impact of the COVID-19 lockdowns on the treatment effectiveness of FFT, the national coordinator examined and anonymised clinical records of clients who entered FFT between 13 march, 2018 and 31 August 2021 for this study, totalling 553 adolescents and families. I then excluded 35 observations from subsequent analyses due to missing data at admission or discharge, representing a data loss rate of 6.33% and the number of participants ending up at *N*=518 (49.4% girls, Mage = 14.214).

**Data Collection Procedures**

The FFT-team leaders are responsible for reporting and regulating treatment data to NUBU.

The Municipality Child Welfare (BUFDIR) initiates the referral process by filing an assessment of clients’ condition to the FFT team (Bufdir, 2021). Next, an FFT-therapist conduct an independent evaluation of the client’s status through clinical consultation at admission(T0), after reconciling any disagreement with the referring agency. This co-assessment design promotes measurement promotes accuracy and reliability (Kilde). FFT therapists is quality and have all undergone rigorous training and must follow detailed guidelines at every stage of the engagement. At admission (T0) and discharge (T1) the FFT-team make a concluding judgement over the dual indicators of national outcome goals and risk levels were conducted.

Subsequently, the FFT-team follow up clients maintenance and progress by phone, on national outcome goals at 6-, 12-, and 18- months post discharge (T2, T3, T4 time points). (NUBU, 2021).

**Measures**

Variables used to measure the effectiveness is presented in this paragraph.

Demographics (x variables) to measure differences in sex, age, and immigration status. Immi1 refers to first generation immigrants who are born outside Norway. Immi2 refers to second generation immigrants who are born I Norway but have parents born abroad.

Variables to measure treatment context (variables): prior refers to whether clients had any kind of prior therapy/treatment. Insti refers to whether the client is returned from institution. Foster refers to whether the client lives in a fosterhome. Psyhelth refers to whether the client has been referred to mental health care.

National outcome goals (T0—T4)(y variables): This represents the sum score of 5 sub scales, which are: 1) Lives with parents or other established home approved by partents, 2) goes to school/employed, 3) youth is not in conflict with the law, 4) is not using substances, 5) is not violent. This data generating process was repeated at 5 time points.

Risk levels (T0, T1) (y-variables) This represents the sum score of the 8 YLS subscales, which are: 1) previous or current law offences, 2) famlily relation, 3) education/work, 4) Friends, 5) substance abuse, 6) leisure/recreation, 7) personality/behaviour, 8) attitudes/orientation.   
Forms are scored on a 3-point Likert scale from low to moderate to high. Clients receive a numerical score which then will be summed up and converted to a numerical sumscore representing the total risk level of the client.

Summary of all variables in this study can be found in table 1.

**Group Division**

The clients were divided in to three groups relative to the national lockdown on 12 march 2020. Clients in the group “before” admitted and discharged before lockdown. Whereas COVID restrictions were introduced while the “during” group was receiving FFT interventions. Lastly, I group clients who entered FFT after lockdown into the “after” group.

**Statistical Analyses**

To deal with clients’ missing data on follow ups, I used multiple imputation (MI) to fill in the missing data. The technique enables analysing missing data with standard models such as t-test. Missing data treatment (MI, Rubin (1987), van Buuren (2018)). I used Mplus’s robust maximum likelihood (MLR, Muthén & Muthén 2017) for all three models. Thanks to this estimator’s ability to generate correct standard errors in the presence of non-normality and non-independence of observations.

**Models**

This study examined the effectiveness of FFT treatment during the COVID-19 pandemic using the following four models:

*Model 1 Differences at admission between the three groups using a Anova test.*

*Model 2 Linear Model using National Outcome Goal as effectiveness measure.*

The second model examines the immediate effectiveness of FFT at discharge (outsum) relative to clients’ national outcome goal sum scores at admission (innsum). Clients’ demographic information and conditions related to treatment environment were included as covariates. I propose the following linear model to obtain the marginal effect of each variable in explaining the recovery outcome:

|  |  |
| --- | --- |
|  | (1) |

*Model 3 Linear Model using Risk Level as effectiveness measure.*

Model 3 differed from Model 1 only by the outcome variable, where risk levels at admission (innylss) and at discharge (outylss) replaced national outcome goals as measurement of treatment effectiveness, with the regression formular:

|  |  |
| --- | --- |
|  | (2) |

*Model 4 Latent Growth Curve Model*

In order to examine the longitudinal effect of FFT on clients’ long-term behavioural patterns, I used latent growth curve models (Bollen & Currant, 2006. S. 126) involving all five time points of the national outcome goals (innsum, outsum, sum6, sum12, and sum18, respectively) as well as covariates similar to Equation (1) and (2). Latent growth curves are models such that all intercept factor loadings are set to 1, while slope factor loadings are linked to the time points T0 to T4. Factor loadings of covariates are freely estimated, whose unstandardized parameters are reported in Figure 1.

**Results**

*Descriptive statistics*

There was insufficient evidence suggesting any group differences at admission. In

particular, clients’ starting behaviour (F 2,515 =0.65, p&gt;.10) and risk levels (F 2,515 =1.73,p&gt;.10) were comparable. Among the covariates, groups differed marginally in   
age(F 2,515 =2.67, p=.070). Among the covariates, only age appeared to differ across the

three groups (F 2,515 =2.67, p=.070).

The change in sum in yls and national outcome goals suggest that the intervention has been effective for the three groups (frequency table).

*Correlation*

Correlation among the covariates is very stable across the three groups indicating that the measurement technique is reliable. (kilde)

**Model Results**

*Regression Models for FFT Effectiveness*

*Latent Growth Curve Model*

The intercept (i) in a latent growth curve model reports the starting points of one’s

growth trajectory. Older clients appeared to start their recoveries from lower points

than their younger peers. This effect was strong and stable for both the before (,

p=.020) and after (, p&lt;.001) groups but not significant for the during group/during the

pandemic.

The slope (s) in a latent growth curve signals the speed of recovery. The recovery

rates were marginally lower for clients with favourable risk reduction profiles (-0.002,

p=.007 and -0.003, p&lt;.001 for before and after groups respectively) except during

the COVID pandemic.

FFT treatment has been effective across the COVID-19 pandemic, and it provided long-lasting benefits in improving clients’ social functionality.

**References**

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