A Retrospective study of outcomes after referral to the Early Intervention in Psychosis programme at Valkenberg Psychiatric Hospital.

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Research Dissertation MMed (Psychiatry)

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Declaration

I hereby declare that the research reported herein is based on independent work performed by the candidate and listed contributors, including the candidate's research supervisor, and that neither the whole work, nor any part of it has been, is being, or is to be submitted for another degree to any other university. Furthermore, this work has not been reported or published prior to registration for this degree.

Signed,

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Abstract

Background: Psychotic Disorders affect more than 1% of the South African adult population and have a chronic course that is associated with high rates of morbidity and mortality. The implementation of early intervention strategies may reduce the severity of these disorders. Little is known about the effectiveness of these interventions in South Africa, and few longer-term studies have been undertaken internationally.

Aim: This study aimed to measure the effectiveness of an Early Intervention and Support (EISH) service at reducing readmission to hospital and average length of stay (ALOS) in patients with psychotic disorders.

Objectives: To measure the readmission rate to Psychiatric inpatient care within two years after discharged from EISH, compared to patients who received treatment as usual (TAU). Secondly, to measure the number of psychiatry inpatient days within two years after being discharged from EISH.

Setting**:** Valkenberg Psychiatric Hospital, Cape Town. The EISH Team is an outpatient service consisting of psychiatrists, a psychologist, an occupational therapist, psychiatric nurses and social workers.

Method: Retrospective cohort study. Hospitalisation during the two years after discharge from the index admission was measured in 65 subjects that attended EISH and 62 who had treatment as usual. Readmission rate, ALOS, time to readmission to District Hospitals (DH) and Tertiary Psychiatric Hospitals (TPH) were calculated.

Results: Readmission Rates were three times higher in TAU compared to EISH patients for both types of Hospital. For TAU subjects compared to EISH subjects: ALOS was longer (59 vs 13 days), and days to readmission were fewer (187 vs 320 days). All differences were statistically significant ($p < .05$).

Conclusion: EISH intervention at Valkenberg Hospital may have been useful in reducing readmission rate, ALOS, and time to readmission in patients with Psychotic disorders. Prospective controlled trials are required to confirm the efficacy of this intervention.

295 Words

Introduction and Literature Review

The most successful addition to the treatment of schizophrenia, and other psychotic illnesses seen over recent decades have been the introduction to specialised early interventions which have been developed in countries such as USA, Denmark, Australia, India and Asian countries (1) (2). These early interventions include psycho-education (3) and family involvement (4) (5). Lengthier periods of untreated psychosis has proven to worsen patient's prognosis, hence the importance of Early Intervention (6).

The early intervention paradigm from which the specialised early intervention systems grew, is based on the hypothesis of a critical period in the disorder (7) (8). The early phases of psychosis have been shown to constitute a critical period with increased risk of relapse, readmission, suicidal behaviour social isolation and worse prognosis has been associated with multiple relapses (9). This hypothesis suggests that the more fluctuating course seen early in psychotic disorders should be more receptive to intervention, which could have long term benefits if patients could be stabilised at a lower level of disability. This led early intervention advocates to argue that treatment resources and research should be directed to the early phase of illness.

There is more to early intervention than intervening early. Mental health recovery is defined as a journey of healing and transformation, enabling a person with mental problems to live a meaningful life in a community of his or her choice, yet striving to achieve his or her full potential (7). During the early stages of mental illness there are unique opportunities to provide patients with a positive experience of mental health services that may influence their future attitudes and behaviour, psycho-education of patients with their families, and collaboratively plan relapse prevention with the ultimate aim at improving the prognosis.

There is an identifiable gap between the knowledge and research of Early Intervention programmes in other African countries and South Africa. In a literature search done on February 2016 and repeated in May 2018, the following keywords were used: Early

intervention, early treatment, first episode, outcome, effectiveness, psychotic. The following sites were used in the literature search: PubMed, Psych info, Scopus, WOS, Africa-wide and Academic Search Premier. There were no reported studies done in South Africa to assess the outcomes or effectiveness of Early Intervention Services in comparison with treatment as usual. While outcomes of the Assertive Community Treatment Team (ACTT) have been studied in Western Cape, South Africa outcomes in relation to relapse and or readmission rates following Early Intervention in Psychosis Programmes have not been studied (10). In Africa, there were a few studies that only focused on interventions in first episode psychosis to prevent recurrent severe psychosis. In other Low and Middle income countries (LAMIC), there has been one study done in India that showed that first episode psychosis (FEP) patients in an early intervention programme (EIP) programme achieved better rates of remission within two years (11).

Early interventions are now well established as standard treatment for first episode psychosis in many developed countries (12) (13). A meta-analysis of the effect of systematised early interventions published in 2014 showed that Early Interventions had positive effects on hospital admission rates and use of bed days while patients were in treatment (14). The largest randomised clinical trial of Systemised Early Interventions, the OPUS trial found that participants in the intervention group relapsed due to psychopathological and functional levels, three years after the end of the intervention and not due to the inadequacy of the intervention compared to those who did not receive early intervention (15). Opus intervention resulted in fewer negative symptoms, psychiatric bed days, and possibly psychotic symptoms. There is a need for further studies to investigate if extending the intervention will improve outcomes more markedly at long-term follow-ups. In a naturalistic study in Canada researchers testing the effect of five years of Early Interventions found that they could sustain and further reduce the psychopathology and increase the functional level of the participants (16). EIPs are effective against improving outcomes after first episode psychosis (FEP) in High Income countries include those in the USA, (17) Canada, Washington DC, (6, 18) (19) and Denmark (15). After discharge from an Early Intervention Programme at a Mental Health Centre in USA, 50% of subjects followed up for 5 years showed signs of improvement in the negative symptoms and a continued improvement in social function (17). Early intervention in Canada has been shown to improve service user and family engagement thus achieving and maintaining symptom remission (19).

In a study assessing the long term cost effectiveness of an EIP for FEP, subjects were followed for 8 years (20). Results showed that subjects had lower levels of positive psychotic symptoms, were more likely to be in remission, and had a favourable course of illness, with lower medical costs in the long run during the course of their illness.

Negative findings; Though the implementation of early intervention services is recommended, the evidence basis need to be strengthened through replication in large high quality trials. Recommendations of the duration of treatment await results of ongoing trials comparing 2 years of intervention in extended treatment periods. The OPUS trial showed evidence of positive effects on psychotic and negative symptoms, on substance abuse and user satisfaction, though the clinical effects are not sustainable when patients are transferred to standard treatment. However, the positive effects on service use and ability to live independently seem to be durable.

Despite evidence that EIPs are beneficial to treating mental illness, EIP dissemination has been slow, even in HAMICs like Italy and Denmark and current implemented programs might be threatened, indicating a short coming of Mental Health Care in general, probably due to stigma, structural problems and low priority for funding (21) (22). In the South African context, treatment as usual mostly consists of referral to a mental health nurse at a Community Health Centre where medication is infrequently reviewed, opportunities for Psychoeducation of patients and careers are limited. Demonstrating value of a local EIP may help inform service development in the South African context.

Research methods and design

Study design

This was a quantitative retrospective cohort study.

Setting

The study was conducted at Valkenberg Hospital (VBH), a tertiary psychiatric hospital in the Western Cape, South Africa. The EISH programme is a weekly outpatient intervention lasting 3 hours every Monday morning. The programme repeats every 6 months, however patients could attend longer depending on their level of need.

EISH was established in 2009 to support the acute inpatient service with a comprehensive and multi discipline outpatient alternative to admissions or intensive individual post discharge care. The emphasis is on rehabilitating patients and providing families with comprehensive psycho education and support. It consists of a multi-disciplinary team (MDT): The psychiatrist offering pharmacological interventions, a psychologist offering supportive therapy, an occupational therapist rehabilitating patients to their previous level of functioning, a social worker who provides further support and assistance with social issues and psychiatric professional nurses. Each member of the MDT is also a case manager over and above the individual roles stated. The program consists of three consecutive hourly sessions. The first hour consists of the two groups that run concurrently for the patients and families. These are open groups and the programme focuses on psycho education and support. The family group focuses on psycho education and support in coping with the frustrations of caring for a psychotic patient, on the other hand the patient group focuses on a psycho education programme and support and they focus on coping with the illness. The EISH members psycho education topics are carefully selected to help them develop insight and instil coping mechanisms for living with a psychotic illness. This is coupled with assisting patients and carers to form safety-nets to avert relapses. In the second hour, patients attend occupational based art groups and family members meet over a cup of tea while the MDT holds a ward round. The third hour include reviews by case managers or other members of the MDT and collection of medication.

The study was approved by the University of Cape Town Human Research Ethics Committee and the National Health Research Database November 2016, and the approval was granted for a year. All collected data was kept anonymous.

Study population

Male and Female patients between the ages of 18 and 35 with a primary psychotic or manic illness unrelated to a general medical condition, preferably in their index presentation or in the earlier years of their mental illness diagnosis. (Diagnoses could include, for example, illnesses such as Schizophreniform disorder, Schizophrenia, Bipolar disorder , Depression with psychosis, Substance induced psychosis.) These patients were referred from either District Hospital or Valkenberg by a Doctor working in Psychiatry. All patients referred would have indicated an initial interest in the intervention, had family or carers who were able to attend the group sessions at least twice monthly and were preferably able to speak English or Afrikaans.

Intervention group

- Patients and families who attended the EISH program for at least 8 weeks.

Less than 8 weeks participation was considered inadequate to get the full benefit of the program.

TAU group:

- Patients who were referred to EISH but declined to attend or could not attend for any reason; or who could not be contacted.
- Patients/families who attended the EISH program for less than 8 weeks

This cohort would then continue with 'treatment as usual' which was a follow up appointment to the mental health department at their local community health clinic.

Key inclusion criteria

All recorded referrals to EISH (paper copies of referrals and or records on EISH statistic sheets) who could be matched to entries on Clinicom, an electronic database which provides records of patients outpatient visits, admissions and discharges from public healthcare services in the Western Cape.

Key exclusion criteria

1. Patient records (either paper referrals or names on EISH statistics sheets) without folder numbers who could not be found on Clinicom

2. Patients who attended EISH (as reported on EISH statistics sheets), but had no corresponding entries onto Clinicom

3. Family members who attended the EISH programme in the absence of the index patient ever attending.

The time periods examined prior and post the intervention were as follows:

1. Pre-EISH Intervention was calculated 2 years prior to date of admission to EISH or the date of referral to EISH for patients who were referred but never attended the program .

The Pre-EISH intervention period of 2 years, although not specific to what the study was examining, was added as data of interest. The information could identify whether this was an index presentation and how many admissions the patient had had pre EISH intervention and whether there was an improvement in that statistic after an EISH intervention.

2. Post-EISH Intervention, was calculated 2 years from the date of discharge from EISH. In the case of the TAU group, this was the date of their referral to EISH if they never attended or, date of discharge from the programme for those who partially attended but for less than 8 weeks.

Sampling strategy

Information for the study was obtained from :

- The electronic records on the Clinicom Information Management System. Clinicom has patient records and dates of all visits to hospitals and some of the community clinics in

the Valkenberg catchment area which makes it the most reliable data available for this study

- The EISH nursing team kept statistics of dates of attendance and discharge, and files of all paper referrals to EISH.

Patients referred to EISH between 1'st of January 2011 and 2013 were initially identified from the EISH records (paper referrals and statistic sheets). Then follow up information on patient demographics, dates of attendance, dates of admissions to district or tertiary hospital were collected from Clinicom. If the patient could not be found on Clinicom due to insufficient information in the EISH records or their EISH visits had not been recorded on Clinicom they were excluded from the sample.

We collected our patient referral data from 1st January 2011 till end of December 2013. Although EISH started in 2009, it only started keeping detailed records of patients in 2011. Due to the Ethics requirements our last post-EISH records were obtained end of December 2015. There was a total of 200 patients, a 100 in each group, but due to exclusions we ended up with a sample size of 127 patients, 65 in the EISH group and 62 in the TAU group. This sample size was however still statistically significant though a larger sample size would be better replicable globally.

Data collection

Data was collected and recorded onto spreadsheets.
Index spreadsheet - A range of clinical and demographic information was collected including: Surname and initials, folder number, residential suburb, date of birth, gender, age at referral to EISH, date of referral to EISH and date of discharge from EISH. , as well as where the patient followed after discharge from EISH - Valkenberg OPD or the Community mental health clinic.

The patients were then separated into the EISH group and the TAU group by calculating the number of days between admission and discharge. If the patient had spent from 0 to 31 days in the intervention, or declined the intervention they were put into the TAU group. Patients who had spent 32 days or more in the intervention were identified as the EISH group.

The Pre-EISH Intervention spreadsheet included the folder number and the (DOA) date of admission to EISH (or date of referral for those in the TAU group who never attended EISH). Then dates of all admissions and discharges (DOD) to either District or Tertiary Psychiatric units preceding this date were collected from Clinicom.
Several calculations were made from this information including number of admissions and duration of hospital stays.
In the current psychiatric admission system in the Western Cape all patients should be admitted initially to a District Hospital and will then be referred to a Tertiary care hospital if required or they will be discharged directly from the District Hospital back into the community care system.
Other calculations included duration of stay in each hospital system and length of entire stay if referred onto a Tertiary unit.

The Post EISH-Intervention spreadsheet included the folder number and the date of discharge from EISH (for those who never attended EISH the referral date was used)- Then dates of all admissions and discharges to either District or Tertiary Psychiatric units subsequent to this date were collected from Clinicom with similar calculations made regarding number of admissions and duration of stay as in the Pre EISH intervention spreadsheet.
All patients were then assigned a number and a new spreadsheet was prepared with no identifying data. The initial spreadsheet was erased, and data was at all times stored in a password-protected electronic file.

Statistical analysis

All statistical analyses were completed using SPPS version 24. The threshold for statistical significance (α) was set at .05 and for each analysis described below, the appropriate effect size estimate was calculated.

A power analysis suggested that the sample size needed to be set at $N = 116$ to achieve a power of 0.90, using linear regression analyses to investigate between -group differences given a medium effect size ($f^2 = 0.15$) and an alpha of .05. Our sample of $N = 125$ generated statistical power of 0.93.

Length of hospital stay, number of readmissions, number of days until readmission post-intervention and age were coded as numerical variables. All other variables were coded as categorical variables. Demographic data was expressed as percentages and differences analysed using the Chi-squared test for categorical variables, or expressed as means and differences analysed using *t*-tests for numerical variables. Independent-sample *t*-tests were used to compare times admitted to hospital and length of hospital stay between patients in the EISH and Control groups (for both pre-and-post intervention). Chi-square tests for contingency assessed the associations for the EISH Intervention with the (a) place of follow-up, and (b) being readmitted to hospital post-intervention. A survival curve analysis was used to determine if a difference existed in total number of days it took to be readmitted to hospital after the intervention.

Backwards linear regressions were used to analyse predictions for readmission. Predictors included age, sex, place of follow-up: community health center or Valkenberg hospital and pre-intervention admissions. Number of times readmitted post-intervention and number of days in hospital post-intervention, as well as the predictor variables and number of times and days admitted to hospital pre-intervention were coded as continuous variables. Sex was coded as a categorical variable; having 2 levels (Male and Female). Dummy coding was applied to this categorical variable; such that Female was the reference group for the category.

None of the data violated assumptions of normality or independence. The independent variables in the regression analyses were not highly correlated. VIF figures were all < 2, providing evidence to suggest few problems with multi-collinearity.

Results

Participant characteristics

We excluded 5 patients from the EISH group whose names were in the EISH files but did not have folder numbers, and 8 from the TAU group who did not have folder numbers. Then 30 patients in both groups who had folder numbers but did not have other details recorded into Clinicom. This resulted in a total sample size of 127 patients, 65 from the EISH group and 62 from the TAU group.

The mean age of patients in the Intervention group were 25.29±5.29 years. 72% were male, and they spent on average, 225.70±120.23 days (range: 44-580 days) in the EISH programme. The mean age of patients in the TAU group were 25.52±6.72 years. 71% were male, and they spent on average, 8.23±27.88 days in the EISH programme.

89% of patients in the EISH group were followed-up at VBH and 11% at a CHC. In contrast, only 32% of patients in the TAU group were followed-up at VBH and 67% at a CHC (χ^2 (1) = 66.12, $p < .001$, $V = .58$).

Prior to the study enrolment, there were no significant differences between participants in the EISH and TAU groups in terms of number of times and total number of days admitted to hospital, day hospital, or tertiary institutions (all *p*s >.240; see Table 1). These results indicate that groups were equivalent prior to the EISH programme.

Post-EISH Intervention, participants in the TAU group were admitted significantly more times, and for longer periods compared to participants in the EISH group (all *p*s <.015; see Table 1). At two-years follow-up, 57.1% ($n = 36$) of the TAU group had been readmitted at least once to hospital, whereas only 29.2% ($n = 19$) of the EISH group had been readmitted (χ^2 (1) = 10.17, $p = .001$, $V = .28$).

Table 1: Readmission rate, length of stay and time to readmission before and after the Intervention.

	EISH Intervention			TAU/Control				
Outcome variable	*n*	Mean	Range	*n*	Mean (SD)	Range	*t/U*	*P*
Before- Intervention								
Total times admitted to hospital	65	1.97 (1.21)	0 – 7	62	2.00 (1.09)	0 – 5	0.15	.882
Total times admitted to DH	65	1.03 (0.73)	0 – 3	62	1.08 (0.67)	0 – 3	0.42	.676
Total times admitted to TI	65	0.94 (0.88)	0 – 4	62	0.92 (0.91)	0 – 4	-0.14	.892
Total days in hospital	65	57.65 (50.77)	0 – 273	62	49.48 (48.79)	0 – 232	-0.92	.362
Total days in DH	65	10.17 (13.13)	0 – 79	62	12.1 (8.79)	0 – 34	0.96	.340
Total days in TI	65	47.48 (47.84)	0 - 225	62	37.38 (47.61)	0 – 232	-1.18	.240
After- Intervention								
Total readmission to hospital±	65	0.64 (1.20)	0 – 5	62	1.73 (2.06)	0 – 7	1335	.001*
Total readmissions to DH±	65	0.35 (0.82)	0 – 3	62	0.82 (1.17)	0 – 6	1559	.015*
Total readmissions to TI±	65	0.29 (0.58)	0 – 2	62	0.92 (1.12)	0 – 4	1307	<.001*
Total days in hospital±	65	13.49 (28.74)	0 – 129	62	57.32 (70.01)	0 – 235	1235.5	<.001*
Total days in DH±	65	2.98 (7.82)	0 – 46	62	9.77 (18.87)	0 – 115	1542.5	.012*
Total days in TI±	65	10.51 (23.83)	0 - 106	62	47.55 (61.89)	0 – 229	1249	<.001*
Δ Total times readmitted to hospital±	58	-70.94 (49.11)	-100 – 100	57	-5.85 (126.57)	-100 –400	1396.5	.002*
Δ Total times readmitted to DH±	50	-69.00 (62.18)	-100 – 200	52	-29.81 (101.10)	-100 – 200	1600.5	.068
Δ Total times readmitted to TI±	46	-60.87 (64.90)	- 100 – 100	42	-18.65 (114.12)	-100 – 300	1400.5	.066
Δ Total days in hospital±	58	-68.99 (69.24)	-100 – 258.33	57	109.85 (363.80)	-100 – 1750	1100	<.001*
Δ Total days in DH±	46	-53.96 (102.58)	-100 – 350	52	19.81 (306.85)	-100 – 1800	1779.5	.179
Δ Total days in TI±	46	-65.59 (76.64)	-100 – 253.33	42	55.31 (236.72)	-100 - 616	1122.5	.011*
Number of days until readmission after-EISH	18	319.56 (230.86)	37 - 750	36	186.78 (177.86)	0 – 607	-2.34	.023*

Note. DH = day hospital. TI = tertiary institution. Δ = % change = (post-EISH - pre-EISH)/ pre- EISH x 100%; positive values indicate an increase in number of times/days admitted. ±Mann-Whitney U test performed, test statistic = *U*, effect size = *r*.

Participants in the Intervention group took longer to be readmitted to hospital 2 years after (303 days) compared to participants in the TAU group (187 days). A survival curve analysis (see Figure 1) indicated that this difference was significant (χ^2 (1) = 4.82, p =.028).

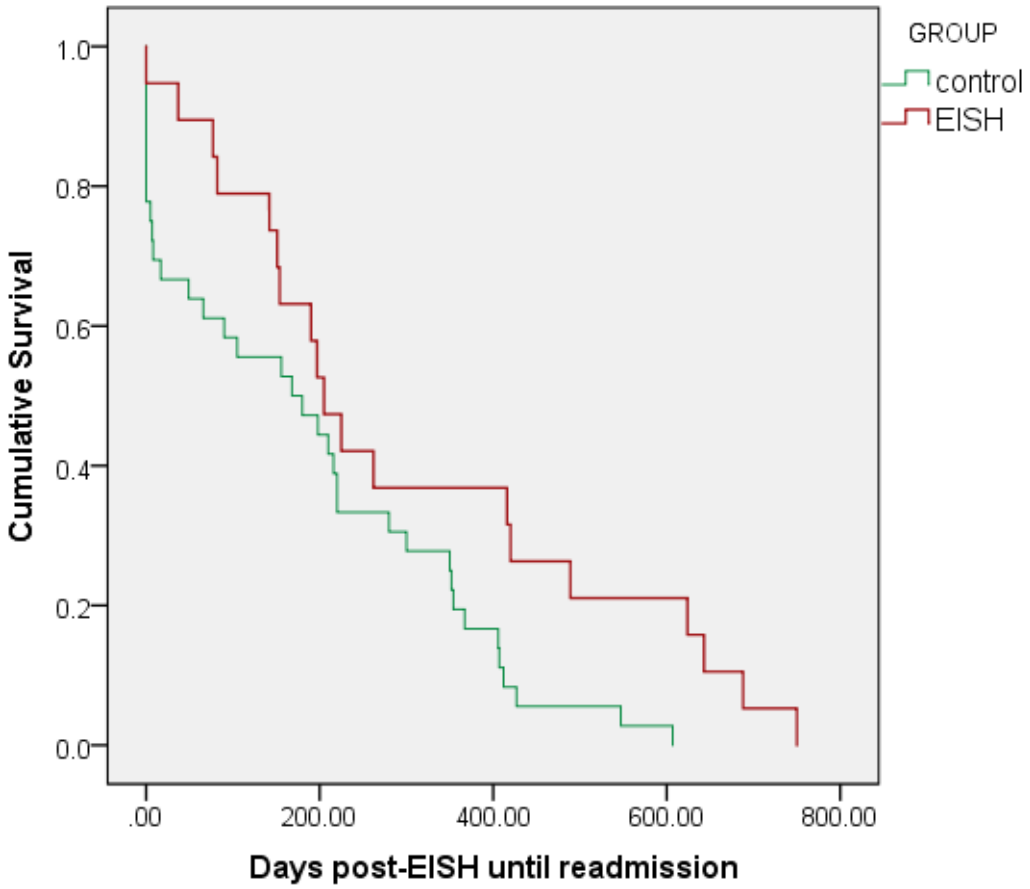

Figure 1: Survival curve analysis.

Predicting post-intervention readmission with multiple hierarchical linear regression

Two hierarchical backwards linear regressions were conducted to determine whether age, sex, place of follow-up, number of times and days admitted to hospital pre-intervention and group predicted (1) number of times readmitted post-intervention, and (2) number of days in hospital post-intervention.

Age, sex, previous admissions and previous average length of stay all had a non-significant relationship with readmission rates and average length of stay post the intervention. There were significant negative correlations between (a) *groups* and both total times and number of days readmitted post-intervention, and (b) place of *follow-up* and both the total time and number of days readmitted post-intervention (see Table 2).

The final regression analyses indicted that both place of follow-up and group were significant predictors of number of times readmitted post-intervention and number of inpatient days in hospital post-intervention. Overall, the models explain 13.6% of the variance in number of times readmitted post-intervention (R = .388, Adjusted R^2 = .136, F [2,118] = 10.47, p <.001), and 22% of the variance in number of inpatient days in hospital post-intervention (R = 480, Adjusted R^2 = .218, F [2,118] = 17.865, p <.001). It appears that both the place of follow-up and group is equally important predictors of number of times readmitted and number of inpatient days in hospital post-intervention. Being followed-up at VBH and being in the EISH intervention predicted fewer times readmitted post-intervention and less inpatient days in hospital post-intervention.

Table 2
Pearson correlation co-efficient between post-intervention admissions and predictor variables

	Post-intervention times re-admitted	Post-intervention number of days in hospital
Age	-.069	-.104
Sex	-.053	.095
Follow-up	-.345*	-.427*
Pre-times admitted	.096	.081
Pre-number of days in hospital	-.017	.012
Group	-.320*	-.396*

* Correlation is significant at the 0.01 level (2 tailed).

Discussion

This study explored the effectiveness of an Early Intervention in Psychosis program compared to treatment as usual. At two years follow up, those in the Intervention group had fewer hospital admissions, lower average length of stay and most of their admissions were managed at district hospitals rather than tertiary institutions.

As there are already few studies which look at the same outcomes, we compared our findings to three related studies. First was the OPUS trial, a specialised and modified assertive care

treatment early intervention program; which is a first episode Cohort study conducted in Denmark. They recruited patients from all inpatient and outpatient psychiatric treatment sites in Denmark Copenhagen, which is the largest market in Scandinavia, high income country, whereas we only recruited outpatients referred from the inpatient wards . Our inclusion criteria included patients aged 18-35, and theirs was 18-45, and thus similar. They had psychoeducation for patient's families and the index patient as we did, but they also included social skills training in their program which we did not add into our intervention .Their study had 347 participants who were followed up from the initial total of 547 patients, at 2 years within the treatment, then at 5 and 10 years after the intervention. Their follow ups were not register dependant as ours was, they had comprehensive interviews on all participants on the Danish registers, and those in psychiatric hospitals, patient's own homes and in supported housing facilities.

The OPUS trial showed that Early Intervention had positive effects on readmission rates after 2 years when patients were in treatment, with 79% of those in the control group readmitted, comparing to 48% in the intervention group. In our study, 57.1% of the control group, TAU group were readmitted and 29.2% from the EISH intervention group readmitted. This could be better explained by the fact that patients were still in treatment in the OPUS trial during the 2 years follow up, and another follow up was conducted 5 and 10 years after the inclusion. ALOS was not measured in the OPUS trial, however in their 5 years follow up they measured the mean number of inpatient days in supported housing, and had 42 days those in the control group and 20 days for those in the intervention group. Our ALOS 2 years post EISH for those who were in the EISH group was 13 and those in the TAU group was 59. This could be explained by the fact that our TAU group were followed up at district hospital and community clinics, and thus did not have as much support with regards to medication administration, ongoing individual and group support which all improves adherence to treatment, comparing to those in the control group in the OPUS trial who were in supported housing. The risk of at least one psychiatric hospitalisation during the 2 years follow up period while patients were still in the OPUS trial was significantly lower at 32.3% for the intervention group comparing to a risk of 42.4% for the TAU group. We did not measure the percentage risk of at least one psychiatric hospitalisation post EISH, but the readmission rate. In our study, participants in the EISH group took longer to be readmitted to hospital 2 years post-intervention (303 days) compared to participants in the TAU group (187 days). The OPUS trial also assessed the course of illness by assessing outcomes of positive and negative psychotic symptoms, substance abuse

after the intervention, treatment adherence and reduced burden to family and future studies should measure these variables. If the outcomes of psychotic symptoms and treatment adherence post early intervention are not measured, this can be detrimental to the health system as admissions to hospital are way too costly and often disruptive to our patients and their families, and we thus need more research from a health economics perspective to confirm the value of early interventions.

In India a cohort study with a total of 47 participants was carried out. They were followed up for 2 years, and they assessed the remission rate and not the readmission rate as we did in our study. They found that more than 20% of those who received the intervention achieved remission after 2 years of early regular treatment. 26% of those in the intervention group stayed in supported housing and 35% of the TAU patients stayed in supported housing. We did not assess this specific outcomes, as many of our patients who were part of the intervention had families to live with. Our ALOS for the EISH group was 13 days and 59 days in the TAU group, and they had 35 days in their intervention group and 26 in their TAU group. Both results are similar, looking at our total sample size of 127 and their of 47, and further indicate the effectiveness of early intervention over treatment as usual. (11).

Christopher U, et al, recently conducted a systematic review on 10 RCT's in the USA in 2018. They found that 6 to 24 months of EIS that consisted of 4 to 6 evidence-based coordinated and integrated treatment components was associated with superior outcomes compared with TAU regarding all meta-analyzable outcomes. Globally, people with early phase psychosis are identified as having not endured many years of illness and functional decline and would generally respond better to treatment. They had a total of 2176 patients from all 10 RCT's, with a mean age of 27.5, which was not far off from our mean age of 25.5. Our readmission rates 2 years post intervention was 57.1% for the TAU group and 29.2% for the EISH group, whereas they had 29.1% in their TAU group and 19.6% in the EIS group, indicating the effectiveness of the intervention in reducing relapse, readmission and consequently ALOS in hospital. They assessed the superiority of EIS by analysing the positive, negative symptoms severity and depression symptom severity.

In future research, one can also look at which patients benefit and who doesn't benefit from the Intervention, describing both the qualitative and quantitative measures of patients and family satisfaction.
Gleeson and colleagues recently demonstrated that the addition of cognitive behaviour and family therapy- based relapse prevention programme to an Early intervention service for individuals in remission from a first episode of psychosis, was more likely to prevent or significantly delay a second episode if compared with an Early intervention service alone. Our study did not look into this and thus, we are unable to compare and contrasts results, however this can further impetus future research in the South African context.

A gap between mediating the need for future development of EIP programs and incorporating the outcome in our communities has been identified, from a study done that looked into unique challenges to the treatment of Early Psychosis in the United States (23). More research needs to be done in this regard for South Africa.

Limitations

Most studies including our study have not looked into the characteristics of existing services, i.e. healthcare worker's morale, teamwork and a sense of culture and adaptation , this has been identified as a limitation. We have also detected a limitation on our study by not being a Randomised Control Trial which helps eliminate selection bias. Smaller sample size – this was a limitation .

Our programme does not have a clear therapy manual which can be useful in determining adherence and fidelity measures. Imbalances in prognostic factors such as distance from VBH and diagnosis (which is an unmeasured confounder).

Missed information due to data not prospectively gathered this led to a third of the data missing, and makes it difficult to draw a conclusion.

Our Treatment as usual group consisted of those followed up in CHCs and hospital OPD, and a possible explanation for better outcomes may be purely follow up at Hospital OPD rather than at a CHC.

Conclusion

Our results have shown a reduction in the number of hospital admissions post Intervention, and fewer total inpatient days in the two years period after being discharged from the program. This is in keeping with international studies indicating that early interventions are effective against reducing relapse rates and readmissions and thus improving patient's prognosis, social cognition, insights and overall well-being.

However, in view of the small sample size and limitations of the study design, we advise a level of cautiousness when interpreting these results.

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