Comparison of Recovery Capital in Patients with Alcohol and Opioid Dependence – An Exploratory Study

Apinderjit Kaur¹, Rakesh Lal¹, Mahadev Singh Sen¹, Siddharth Sarkar¹

Abstract

Background: Recovery capital helps in the assessment of the personal strengths and challenges that exist in an individual with substance use which may have an impact on recovery process. This study aims at finding out the factors which help such individuals to sustain their recovery and how these factors differ across the two groups of people suffering from Alcohol Dependence Syndrome and Opioid Dependence Syndrome.

Methods: A cross-sectional observational was designed where sociodemographic and clinical variables, the recovery capital ARC (Assessment of Recovery Capital) Scale and Severity of substance use SDS (Severity of Dependence) Scale of patients diagnosed with Alcohol Dependence Syndrome (ADS group) and those with Opioid Dependence Syndrome (ODS group) were assessed among patients not reporting withdrawal symptoms.

Findings: A total of 49 subjects in the ODS group and 30 subjects in the ADS group were enrolled. The majority of the subjects in both groups were married, belonged to urban areas, practiced Hinduism, and were living in nuclear families. There was a significant difference between the educational status (p<0.001), religion practiced (p<0.001), age of onset of dependence (p<0.001), severity of dependence (p=0.11), and duration of abstinence (p<0.001) between the ADS and ODS groups. The mean scores on ARC Scale were 45.9 (S.D. =3.5) in the ODS group and 47.4 (S.D. =4.3) in the ADS group. ADS group had higher scores in Social Support Domain (p=0.034) and Housing and Safety domain (p=0.025). Other domains like global health, citizenship, meaningful activities, risk-taking, coping, and recovery experience did not significantly differ between the groups.

Conclusion: This study aims at comparing the recovery capital of ADS patients with ODS patients. It also suggests that tailored treatment plans for people with ADS and ODS especially in housing and social support and common treatment approach in other domains of recovery will help them sustain the state for a longer term.

Keywords: Alcoholism; Mental Health Recovery; Opioid-Related Disorders; Substance-Related Disorders

Citation: Kaur A, Lal R, Sen MS, Sarkar S. Comparison of Recovery Capital in Patients with Alcohol and Opioid Dependence – An Exploratory Study. Addict Health 2022; 14(2): 105-14.

Received: 09.10.2021
Accepted: 12.01.2022

1- Department of Psychiatry and NDDTC, All India Institute of Medical Sciences, New Delhi, India
Correspondence to: Mahadev Singh Sen; Department of Psychiatry and NDDTC, All India Institute of Medical Sciences, New Delhi, India; Email: mahadevsinghsen@aiims.edu
**Introduction**

Substance use is the leading risk factor for premature disability and mortality among individuals aged 15 to 49 years. A vast majority of our population suffers from problems related to alcohol and opioid use. Amongst all mental health disorders, disorders due to psychoactive substance use have the highest prevalence. Addiction is widely believed to be “a chronic, relapsing disorder” and many individuals on their path to recovery face multiple relapses. Individuals with substance use disorders could be helped if the duration of abstinence phases is increased and the number of relapses is reduced. The non-pharmacological modalities currently available are not substance-specific. These are initially developed for one substance and later the principles of these interventions are applied on other substances as well. As individuals are fighting the problem of their addiction with different resources in hand the treatment options for different substances should be personalized.

Recovery in addiction is defined as “A process of change through which individuals improve their health and wellbeing, live a self-directed life, and strive to reach their full potential”. Sum of all resources which help the individual to initiate and sustain this process is called Recovery Capital (RC). This concept has recently gained popularity because it helps us to understand the process of recovery objectively. A higher level of recovery capital is a significant predictor of abstinence, self-efficacy, sustained recovery, higher quality of life, lower stress, and a predictor of treatment completion. Recovery capital can serve as a good indicator of progress of a patient with substance use disorder, and assess the efficacy of how treatment progression changes the course of lives of the patients.

The existing literature suggests that factors associated with poor recovery capital are extremes of age, female gender, and having comorbid mental health illness. While factors associated with better recovery capital are current employment, having good educational credentials, and having a strong social support system and spirituality. The severity of the addiction along with the existing resources determines the intensity of care required for that individual.

Researchers in the past have tried assessing recovery capital by various measures, but few have applied quantitative approaches. Thus, gaining insight into the positive aspects of the disease pathology of such individuals will help us in the way we deal with these patients. Hence, a comparison of recovery capital between these two groups will help us to delineate important areas of focus and personalize the therapeutic approach. Keeping these factors in mind we planned to assess and compare the recovery capital of patients with Alcohol Dependence Syndrome (ADS) and those with Opioid Dependence Syndrome (ODS).

**Methods**

**Study Design:** It is a descriptive comparative study with a cross-sectional observational design. We recruited subjects in the two groups i.e., ODS and ADS. As this was an exploratory study purposeful sampling method was employed and the sample size was calculated differently for both groups using estimates from another study from Northern India. The sample size for each group was < 30 for both the groups (α=0.05; Power=0.9; β=0.1). Thus, a sample size of a minimum of 30 was kept to have a reasonable estimate of differences. The data was collected from patients, after taking informed consent and ensuring confidentiality. Recruitment of participants was done between October 2019 to March 2020.

**Study settings:** The study was conducted in the outpatient setting of a leading addiction treatment facility affiliated to a medical school in New Delhi. Permission from the Institute Ethics Committee was sought before conducting the study.

**Study Population:** Individuals aged 18 years or above fulfilling the ICD 10 criteria for either ADS or ODS were approached. As female patients are grossly underrepresented amongst those availing addiction services in the country, only male patients were taken to reduce heterogeneity. Those who consented to participate were finally included in either group. Participants who were not in an active withdrawal state were screened for the study using structured instruments. Those patients with any medical or neurological comorbidity causing an inability to participate in the study or who had any other psychiatric diagnosis (except tobacco use disorders) were excluded from the study.

**Study Instruments:** Patients’ sociodemographic and clinical profile data including the pattern of substance use, duration of dependence, and current treatment was collected using self-reported proformas.
Participants who were not in an active withdrawal state were screened i.e., Clinical Institute Withdrawal Assessment for Alcohol - revised version (CIWA-Ar)\(^\text{27}\) score less than 10 in the ADS group or Clinical Opiate Withdrawal Scale (COWS)\(^\text{28}\) score less than 12 in ODS group were selected. These two scales are commonly used in such populations for clinical and research purposes and have good inter-rater reliability and validity.

All participants were assessed using the Severity of Dependence (SDS) and Assessment of Recovery Capital (ARC) scale. The ARC consists of 50 statements that are clubbed in 10 domains.\(^\text{29}\) Each domain has five items, each of them assessing recovery strengths. The domains are Substance Use and Sobriety; Citizenship and Community Involvement; Global Psychological Health; Social Support; Global Physical Health; Housing and Safety; Meaningful Activities; Risk-Taking; Recovery Experience; and Coping and Life Functioning. Test-retest reliability (rho = 0.93) and internal consistency (Cronbach's \(\alpha = 0.86\)) are good in the Hindi version of the scale. Concurrent validity for the scale has been established using The World Health Organization quality of life-BREF. The SDS has five items, and these assess psychological components of dependence.\(^\text{30}\) The items cover impaired control over drug-taking, anxieties about drug use and preoccupation. The scores are higher in treatment-seeking samples than in non-treatment samples. The psychometric properties of the scale were good across several samples from different countries.\(^\text{30}\)

**Procedure:** After taking the institutional ethical approval, patients were recruited from OPD based on predetermined selection criteria. The assessment was completed in a single sitting lasting for around one hour. The patients were assessed within 1 week of recruitment preferably on the same day. Their routine care (pharmacological and no pharmacological) was unaffected by their participation in the study. A total of 111 participants were screened for the study. Seventy-five screened subjects were screened in group 1 (ODS), out of which 1 refused to give informed consent; 20 subjects were excluded for fulfilling dependence criteria for other substances (other than tobacco) and 5 were excluded for having other psychiatric comorbidities. In group 2 (ADS) group, 36 subjects were screened in total, out of which 4 were excluded for fulfilling dependence criteria for other substances (other than tobacco) and 2 subjects were excluded for having other psychiatric comorbidities.

**Data Analysis:** The data collected was entered in the Microsoft Excel program and analyzed in SPSS statistical package, version 20.\(^\text{31}\) Means, standard deviations, frequencies, percentages, medians, and ranges were employed to describe the data because this was primarily a descriptive study. For comparison of continuous and categorical variables across the ODS and ADS groups, t-test and chi-square tests were used respectively. For the ARC items showing differences between the two groups, the effect sizes (Cohen's \(d\)) of the differences were calculated. Missing value imputation was not necessary because \(P<0.05\) was considered statistically significant.

**Results**

A total of 79 subjects were enrolled in the study with 49 subjects in group 1 (ODS) and 30 subjects enrolled in Group 2 (ADS) (as shown in table 1). The majority of the subjects in both groups were married, belonged to urban areas, practiced Hinduism, and were living in nuclear families. There was no significant difference between age, marital status, occupation, and family type distribution of ADS and ODS group. Patients in the ADS groups were significantly more likely to have higher education than the ODS group. There were significantly more Hindus in the ADS group and Muslims in the ODS group.

In the ADS group, the mean age of onset of substance use was 22.9 years, the mean age of dependence was 29.8 years, and the duration of abstinence was 8 months. In the ODS group, the mean age of onset of substance use was 21 years, the mean age of dependence was 21 years, and the duration of abstinence was 31.8 months. There was a significant difference between the mean age of onset of dependence and duration of abstinence between the ADS and ODS groups. The mean SDS score for the ADS group was 10.9. The mean SDS score for the ODS group was 12.8. There was a significant difference between the Severity of Dependence between ADS and ODS groups, with greater severity in the ODS group.

For the ADS group, out of 30 subjects, 13 subjects (43%) were on a combination of disulfiram and Naltrexone, 7 subjects (23%) on Naltrexone alone, 5 subjects (17%) on a combination of Disulfiram and Acamprosate, 2 subjects (7%) on Disulfiram only and 3 subjects (10%) on other...
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Recovery Capital: For the ADS group, the mean ARC total score was 47.4 (±4.3) as compared to the ODS group where ARC total score was 45.9 (±3.5) (scores shown in table 2). The overall ARC scores did not differ between the groups. A comparison of all the domains of recovery capital was made between the two groups which showed that there were some differences between social support and housing between them. ARC 5 Social Support mean score for the ADS group was 4.1, significantly higher than the mean score for the ODS group that was 3.5. ARC 7 Housing and Safety mean score for the ADS group was 4.9, significantly higher than the mean score for the ODS group that was 4.5.

Table 1. Sociodemographic and Clinical Profile

| Variable                          | ODS Group (n = 49) Frequency (%) or Mean (Standard Deviation) | ADS Group (n = 30) Frequency (%) or Mean (Standard Deviation) | Comparison (p value) |
|-----------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------|
| Age                               | 40.3 (13.5)                                                   | 39.6 (7.1)                                                   | t = 0.280 (0.780)    |
| Marital status                    |                                                               |                                                              |                      |
| Married                           | 32 (65.3%)                                                   | 22 (73.3%)                                                   | \( \chi^2 = 0.568 \) (0.753) |
| Unmarried                         | 13 (26.5%)                                                   | 6 (20%)                                                      |                      |
| Separated                         | 4 (8.2%)                                                     | 2 (6.7%)                                                     |                      |
| Education                         |                                                               |                                                              |                      |
| Up to Middle School               | 29 (59.2%)                                                   | 4 (13.3%)                                                    | \( \chi^2 = 14.3 (<0.001)*  |
| High School and Above             | 20 (40.8%)                                                   | 26 (86.7%)                                                   |                      |
| Occupation                        |                                                               |                                                              |                      |
| Skilled/Clerical/Professional     | 25 (51%)                                                     | 17 (56.7%)                                                   | \( \chi^2 = 0.238 \) (0.625) |
| Unskilled/Unemployed              | 24 (49%)                                                     | 13(43.3%)                                                    |                      |
| Residence                         |                                                               |                                                              |                      |
| Urban                             | 34 (69.4%)                                                   | 27 (90%)                                                     | Fisher Exact (p = 0.052) |
| Rural                             | 15 (30.6%)                                                   | 3 (10%)                                                      |                      |
| Religion                          |                                                               |                                                              |                      |
| Hindu                             | 25 (51.0%)                                                   | 27 (90%)                                                     | \( \chi^2 = 16.459 (<0.001)*  |
| Islam                             | 14 (28.6%)                                                   | 2 (6.7%)                                                     |                      |
| Sikh/Others                       | 10 (20.4%)                                                   | 1 (3.3%)                                                     |                      |
| Family Type                       |                                                               |                                                              |                      |
| Alone                             | 2 (4.1%)                                                     | 0 (0%)                                                       | \( \chi^2 = 1.333 \) (0.514) |
| Nuclear                           | 38 (77.6%)                                                   | 25 (83.3%)                                                   |                      |
| Joint                             | 9 (18.4%)                                                    | 5 (16.7%)                                                    |                      |
| Income                            |                                                               |                                                              |                      |
| Up to INR 5000/month              | 34 (69.4%)                                                   | 21 (70.0%)                                                   | \( \chi^2 = 0.003 \) (0.956) |
| Above INR 5000/month              | 15 (30.6%)                                                   | 9 (30.0%)                                                    |                      |
| Age of onset of substance use (years) | 21.0 (7.1)                                                   | 22.9 (6.4)                                                   | t = 1.195 (0.236)    |
| Age of onset of dependence (years) | 21.0 (7.1)                                                   | 29.8 (7.9)                                                   | t = 5.118 (<0.001)*  |
| Duration of abstinence (months)    | 31.8 (37.5)                                                  | 8 (14.3)                                                     | t = 3.326 (<0.001)*  |
| Severity of Dependence Score      | 12.8 (2.7)                                                   | 10.9 (3.7)                                                   | t = 2.599 (0.011)**  |

*p<0.001  **p<0.05
Table 2. Recovery Capital

| Variable                                      | ODS Group (n = 49) | ADS Group (n = 30) | Comparison (p value) |
|-----------------------------------------------|--------------------|--------------------|---------------------|
| ARC Total Score                               | 45.9 (3.5)         | 47.4 (4.3)         | t = 0.123 (0.903)   |
| ARC 1 - Substance Use and Sobriety            | 5.0 (0.0)          | 5.0 (0.0)          | NA                  |
| ARC 2 Global Health- Psychological            | 4.8 (0.6)          | 4.9 (0.3)          | t = 0.932 (0.354)   |
| ARC 3 Global Health- Physical                 | 4.7 (0.8)          | 4.8 (0.7)          | t = 0.660 (0.511)   |
| ARC4 Citizenship/ Community Involvement       | 4.9 (0.5)          | 4.9 (0.3)          | t = 0.227 (0.821)   |
| ARC5 Social Support                           | 3.5 (1.2)          | 4.1 (1.2)          | t = 2.154 (0.034)*  |
| ARC 6 Meaningful Activities                   | 4.4 (1.1)          | 4.5 (1.2)          | t = 0.224 (0.823)   |
| ARC 7 Housing and Safety                      | 4.5 (1.1)          | 4.9 (0.4)          | t = 2.298 (0.025)*  |
| ARC 8 Risk Taking                             | 4.4 (0.6)          | 4.7 (0.7)          | t = 1.833 (0.071)   |
| ARC 9 Coping and Life Functioning             | 5.0 (0.1)          | 4.9 (0.3)          | t = 1.038 (0.303)   |
| ARC10 Recovery Experience                     | 4.8 (0.5)          | 4.8 (0.7)          | t = 0.123 (0.903)   |

Scores are shown as mean (standard deviation), * p <0.05

Analysis of Correlation of recovery capital with other variables was done and it was noted that the ARC total score did not have a significant correlation with age, age of onset of substance use, age of substance dependence, duration of abstinence, the severity of dependence in both the groups (Table 3).

Table 3. Correlation of recovery capital with other variables

| Variable                          | ODS group Correlation (p value) (n = 49) | ADS group Correlation (p value) (n = 30) |
|-----------------------------------|----------------------------------------|----------------------------------------|
| Age                               | -0.051 (0.729)                         | 0.077 (0.687)                         |
| Age of onset of substance use     | 0.100 (0.493)                          | 0.0148 (0.435)                        |
| Age of substance dependence       | 0.099 (0.500)                          | 0.059 (0.758)                         |
| Duration of abstinence            | -0.074 (0.615)                         | 0.257 (0.170)                         |
| Per-capita income                 | 0.207 (0.153)                          | -0.012 (0.949)                        |
| Severity of dependence            | 0.052 (0.724)                          | -0.228 (0.225)                        |

Discussion

Comparing the mean ARC scores of the two groups we found that the scores were similar in both the ODS group and the ADS group. However, the scores in both the groups were high when compared to other studies from the region as most subjects in our study were abstinent for more than 6 months. There was a significant difference between the Social support and Housing and Safety domain between the 2 groups with the ADS group having higher scores for the Social Support and Housing and Safety domain of ARC. This could be due to the more acceptability of alcohol as a substance in our society than opioid use leading to poor quality of life in a family member, higher family burden, and worse social support in the ODS population.

ADS group also scored more on Housing and Safety domain because the daily cost of substance is comparatively lower than that for the ODS group and the physical capital remains preserved. The functioning of people with ODS is also hampered and unemployment usually results from severe substance dependence. Both groups had comparable scores in the domains of psychological health, physical health, citizenship,
meaningful activities, risk-taking, and life functioning. This is due to the similar affection of these domains in addiction for the two substances and hence similar resources at hand, to begin with.

The highest scores were found in the domain of substance use and sobriety because all the subjects were now abstinent and had not had any lapses. The earliest phase of recovery deals with achievement and maintenance of abstinence and has abstinence-focused goals.37 The majority of the subjects had passed this stage, were maintaining recovery, and trying to focus more on individual growth. The lowest scores were found in the social support domain of ARC. This can be explained by the fact that social relationships suffer from substance use. Substance use impacts individual social functioning. Further, people with poor social support are at a higher risk of developing severe addictions. Developing good social support can help aid recovery.38,39

We did not find any significant correlation between recovery capital as measured by ARC with the duration of abstinence in both ADS and ODS groups unlike previous studies.40,41 This could be because of subjects being in different stages in recovery. These findings can be extrapolated to the management of the two groups along similar lines using the above-mentioned resources.

In our study, the mean age of ODS subjects was higher than that of subjects in the ADS group which was different from other studies from the same region.42-45 This could be because our subjects were in different stages of recovery. The mean age of the ODS group was higher than that found in other recent studies.32,41 Subjects of the ADS group were more educated than those of the ODS group which was similar to previous studies.36 There was a significant difference in the mean age of onset of dependence and duration of abstinence between the ADS and ODS groups similar to the findings of the previous studies from the region.42,44 The severity of dependence observed was similar to the pattern seen in a previous study with ODS having more scores than the ADS population.46 The present study has certain limitations in the form of cross-sectional assessment, small sample size, and purposive sampling. Subjects were also in different stages of recovery. This study among treatment seekers may not reflect the recovery capital among patients in the community. Another potential limitation of recall bias may apply. Although the sample size calculated for different groups was adequate, post hoc power calculation of the total ARC scores revealed a power of 40.5%. Despite the limitations, this is the first study that compares the correlates of recovery capital between different substance uses in India to our knowledge. The study provides comparative information of alcohol and opioid dependence, the common substances in the region.47

Future studies can recruit a larger number of patients from different centers, recruited from the community, inclusion group by different stages of recovery, and carrying out a longitudinal assessment of patients. Another confounding factor can be the inclusion of tobacco use in both our groups. Future studies can be conducted to assess the extent of the bias in recovery capital associated with nicotine dependence, and assess recovery in patients with dependence on opium and being treated.48 Assessment of recovery capital involved interviewing and questionnaires completion by only the patient and not any of the family members. This should be kept in mind while designing future studies.

**Conclusion**

This study adds to the existing literature on recovery capital in people suffering from Alcohol and Opioid dependence. It also opens up questions for further research on recovery capital. Studies and literature on recovery capital from India are scarce, and further research in this area would be useful. The results of our study also reveal that recovery capital as assessed by the study was better as compared to that found in the results of the western part of the world which may be due to cultural differences. Also, the study shows that there are differences between the recovery capital of ADS and ODS group, especially in housing and social support which further suggests tailored treatment plans for different substance users. The recovery process and the treatment should be individualized as per the recovery capital of the patient to achieve a smoother and long-lasting recovery. Recovery should be seen as an ongoing process and an achievable one and this message must spread across groups and populations to reduce the stigma. The message for social support enhancement and housing support should be spread as it was seen in our study that social
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Support had a role to play in the recovery of people suffering from substance use disorders.

Conflict of Interests
The authors do not have any conflicts of interest to declare.

Acknowledgements
We would like to thank the Department of Psychiatry and NDDTC, All India Institute of Medical Sciences for providing critical inputs. We would also like to thank the participants of the study.

Authors’ Contribution
The work was conceptualized by AK, MSS, RL and SS. The protocol was drafted by AK and MSS under the guidance of RL and SS. Data collection was done by AK. Analysis was done by AK, MSS and SS. First draft was written by AK and MSS which was further refined by RL and SS.
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http://ahj.kmu.ac.ir, 04 April
مقایسه سرمایه بهبودی در بیماران مبتلا به اعتیاد به الکل و مواد مخدر – یک مطالعه اکتشافی

چکیده
مقدمه: سرمایه بهبودی به ارزیابی نقاط قوت و بالاتری حاصل به همراه با افزایش شاخصهای علیه بهبودی مربوط می‌شود. در این مطالعه می‌پردازیم، این افرادی که در دو گروه مبتلا به الکل و مواد مخدر و مناسب به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام مطالعه سندهای اکتشافه‌ای هستند. اکثر افراد در هر دو گروه متاهل، بخشی از افرادی که اقدام به بررسی عوامل هستند. گروه‌های بیمارستان گوره به سندروم وایتسنگی با کمکی می‌کنند در بیمارستان گوره و ARC ون دهلی نو، هند راکش لال در مجموع 494 نفر در دو گروه ODS و 20 نفر در گروه ADS انجام M