The role of locus of control in nyaope addiction treatment

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Background: Nyaope addiction is a significant health and social problem affecting some South African communities. With reported nyaope rehabilitation success rates of less than 3% and estimated dropout rates of 40%, improvement in the rehabilitation rates is essential. As locus of control (LOC) is a recognised predictive factor in the onset of substance use and rehabilitation outcomes, a rehabilitation programme aligned to the LOC orientation of the user could result in improved recovery outcomes. This study aimed to determine the LOC of nyaope users.

Methods: Consenting adult male and female nyaope users voluntary participated in this quantitative study. After convenient sampling, 115 nyaope users admitted to drug rehabilitation centres registered and funded by the Gauteng Department of Social Development and 106 nyaope users from the streets of urban areas of Tshwane completed a self-administered validated questionnaire. LOC orientation was determined by giving participants 13 statements from which they had to choose the option that best described their situation in relation to drug addiction.

Results: A total of 24.5% (47/192) of the respondents could be classified as having an external LOC orientation while 75.5% (145/192) were classified as having an internal LOC orientation.

Conclusions: By determining the LOC orientation of a nyaope user, rehabilitation programmes could be aligned to suit the personality of the user leading to a better chance of successful recovery with fewer cases of readmission.

Keywords: drug addiction, locus of control, nyaope, treatment

Introduction

Substance abuse is a universal social problem, which has a negative impact on the health of the user, the immediate environment of the user, and the society as a whole. It is estimated about 15% of South African youth are susceptible to drug abuse and that exposure to the designer drug ‘nyaope’ is very common. Nyaope, which is available for about R30 to R45 per hit (±$3), by and large comprises 10–70% third-grade heroin to which a variety of substances are added. As nyaope is one of the cheapest illicit drugs widely available in South Africa it is easily accessible to many young people who resort to criminal activities in order to obtain money for their next fix. This drug cocktail is mixed with cannabis, heated and the fumes are inhaled, and of late this mixture is also injected directly into the veins. It is claimed that a person can get addicted to nyaope after using it for the first time.

The problem of nyaope addiction is further compounded by the high levels of unmet substance abuse treatment needs, particularly within the poorer South African communities, as well as the high cost of medication required for the withdrawal symptoms associated with heroin addiction. Rehabilitation, which can take between 12 and 15 months, is possible but requires a multidisciplinary professional approach. What is of concern is that South African studies have reported that the number of treatment admissions to rehabilitation centres has increased significantly over the years with a steady increase in treatment demand for young people below 20 years of age. Also, treatment for clients in rehabilitation centres continue to be a challenge as dropout rates between 2% and 40% or higher are seen.

The psychological variable locus of control (LOC), which evolved from Bandura’s Social Learning Theory, is recognised as a predictive factor in the onset and continuous use of substances among adolescents. LOC, which can be either internal or external, refers to the individual’s beliefs regarding the relationships between action and outcome, and this explains how people actively deal with difficult circumstances in their lives. Individuals with a higher internal LOC orientation believe and expect that they will determine their own future because of their own actions, i.e. they are actively in control over what happens to them, while those with a higher external LOC orientation do not expect to have any control or influence over their future and lives, believing that the outcome is a result of external or impersonal forces such as luck, prayer, fate or powerful others. By distinguishing between the two personality characteristic orientations, i.e. external vs. internal LOC orientation of the nyaope user, rehabilitation programmes could be aligned to suit the personality leading to a better chance of success of recovery with fewer cases of readmission.

The aim of this study was to determine the LOC orientation amongst nyaope users.

Materials and methods

Nyaope users admitted to drug rehabilitation centres registered and funded by the Gauteng Department of Social Development located in Tembisa, Ebony Park, Soshanguve, Hammanskraal and Cullinan and nyaope users from the streets of urban areas of Ga-Rankuwa, Soshanguve and Hammanskraal formed the study population.

A sample of convenience was done amongst clients from the rehabilitation centres. Arrangements were made with the Chief Executive Officers and management of the different centres to collect data on a pre-determined day. On the arranged day the eligible clients were asked to assemble in a room allocated by
the rehabilitation centre where the purpose of the study was explained. Potential participants were given an opportunity to ask questions and any concerns regarding the study were clarified. For the man/woman in the street (not in rehabilitation) the researchers made use of purposive snowball sampling. Research assistants indigenous to and intimately familiar with the targeted population of nyaope users were hired to assist in the identification of possible participants and data collection. The research assistants approached the characteristic nyaope users (unkempt and uncaring about their outward appearance) and, after confirming that they were users, asked them for voluntary participation. The researchers also made use of informants and non-governmental officers (NGOs) who were working with nyaope users in the communities. A pharmacist in Soshanguve, who was working closely with nyaope users, made a room available in the pharmacy where data collection took place.

Nyaope users, male and female, 18 years and above, who were able to read the consent form and able to understand the communications that took place regarding the purpose and procedure of the study, and who were willing to voluntarily participate, were given consent forms to sign. The structured self-administered questionnaire used in this quantitative study was an adaptation of validated questionnaires, both designed to test drug-related LOC beliefs in drug-abusing populations, as well as a questionnaire that was developed specifically to be used for drug-use surveys amongst young people. The questionnaire was in English but research assistants were present to deal with any questions that arose or to help translate or explain the meaning of words in the home language of the participants if they did not understand.

The drug-related LOC scale was a forced-choice measure between two statements with one statement indicative of an internal LOC orientation and the other indicative of an external LOC orientation. Thirteen questions were asked where participants had to choose the statement in each pair that most accurately described their current beliefs related to their own drug-use control expectancies. The final LOC orientation score was computed by adding the scores obtained for the 13 questions where 1 mark was allocated to a response indicative of an internal LOC orientation and 2 marks allocated to a response indicative of an external LOC orientation. Nyaope users with a greater internal LOC orientation would therefore produce scores nearer to 13, while those with a greater external LOC would produce scores nearer to 26. The questionnaire was pre-tested and pilot tested amongst 20 nyaope users who did not form part of the final study population. Quality, consistency and clarity of the questions were achieved by asking close-ended questions in a plain and simple language. The final sample size of 221 was reached after 4 months of data collection.

### Table 1: Demographic characteristics of sample population (n = 221)

| Characteristics              | Rehabilitation | Street  | Total   |
|------------------------------|----------------|---------|---------|
|                              | n   | %  | n   | %  | n   | %  |
| **Gender**                   |     |    |     |    |     |    |
| Male                         | 98  | 85.2 | 91  | 85.8 | 189 | 85.5 |
| Female                       | 17  | 14.8 | 15  | 14.2 | 32  | 14.5 |
| **Age**                      |     |    |     |    |     |    |
| 18–23                        | 39  | 33.9 | 34  | 32.1 | 73  | 33.0 |
| 24–29                        | 54  | 47.0 | 59  | 55.7 | 113 | 51.1 |
| 30–35                        | 17  | 14.8 | 12  | 11.3 | 29  | 13.1 |
| 36–41                        | 5   | 4.3  | 1   | 0.9  | 6   | 2.7 |
| **Education**                |     |    |     |    |     |    |
| None                         | 2   | 1.7  | 5   | 2.3  | 6   | 2.7 |
| Primary                      | 5   | 4.3  | 4   | 3.8  | 9   | 4.1 |
| Secondary                    | 95  | 82.6 | 89  | 84.0 | 184 | 83.3 |
| Tertiary                     | 13  | 11.3 | 8   | 7.5  | 21  | 9.5 |
| **Religious**                |     |    |     |    |     |    |
| Yes                          | 75  | 65.2 | 67  | 63.2 | 142 | 64.3 |
| No                           | 40  | 34.8 | 39  | 36.8 | 79  | 35.7 |
| **Employed**                 |     |    |     |    |     |    |
| Yes                          | 12  | 10.4 | 11  | 10.4 | 23  | 10.4 |
| No                           | 103 | 89.6 | 95  | 89.6 | 198 | 89.6 |
| **Financial support**        |     |    |     |    |     |    |
| Self                         | 52  | 45.2 | 49  | 46.2 | 101 | 45.7 |
| Friends                      | 3   | 1.7  | 5   | 4.7  | 7   | 3.2 |
| Relatives                    | 13  | 11.3 | 12  | 11.3 | 25  | 11.3 |
| Parents                      | 48  | 41.7 | 40  | 37.7 | 88  | 39.8 |
| **Relationship status**      |     |    |     |    |     |    |
| Single                       | 70  | 60.9 | 73  | 68.9 | 143 | 64.7 |
| Partner                      | 43  | 37.4 | 33  | 31.1 | 76  | 34.4 |
| Married                      | 2   | 1.7  | 0   | 0.0  | 2   | 0.9 |
| **Age of first drug use**    |     |    |     |    |     |    |
| 7–12                         | 7   | 6.1  | 5   | 4.7  | 12  | 5.4 |
| 13–18                        | 63  | 54.8 | 58  | 54.7 | 121 | 54.8 |
| 19–24                        | 39  | 33.9 | 28  | 26.4 | 67  | 30.3 |
| 25–30                        | 4   | 3.5  | 8   | 7.5  | 12  | 5.4 |
| 31–37                        | 0   | 0.0  | 1   | 0.9  | 1   | 0.5 |
| Did not answer               | 2   | 1.7  | 6   | 5.7  | 8   | 3.6 |
The final analysis of LOC orientation of nyaope users (see Table 3).

Only the 86.9% (192/221) of participants who completed all 13 LOC statements.

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Results

Table 2: Responses of nyaope users to LOC statements (n = 192)

| Statement                                                                 | Rehab (%) | Street (%) | Total (%) |
|---------------------------------------------------------------------------|-----------|------------|-----------|
| 1. Everybody has a choice to take drugs or not, what other people say has nothing to do with it | 53 (48.6) | 47 (56.6)  | 100 (52.1) |
| 2. Often your friends pressurise you to join them in taking drugs           | 56 (51.4) | 36 (43.4)  | 92 (47.9)  |
| 3. It is difficult not to drink at a party where everybody else is drinking | 45 (41.3) | 38 (45.8)  | 83 (43.2)  |
| 4. If a person has decided not to drink at a party they will not drink     | 64 (58.7) | 45 (64.2)  | 109 (56.8) |
| 5. Those who manage to stop using drugs are the lucky ones                | 31 (28.4) | 28 (33.7)  | 59 (30.7)  |
| 6. It is very hard work to stop using drugs                               | 78 (71.6) | 55 (66.3)  | 133 (69.3) |
| 7. My friends will not be able to force me to use drugs                   | 71 (65.1) | 49 (59.0)  | 120 (62.5) |
| 8. My friends are influencing me to take drugs                            | 38 (34.9) | 34 (41.0)  | 72 (37.5)  |
| 9. People take drugs because they feel anxious and helpless               | 40 (36.7) | 38 (45.8)  | 78 (40.6)  |
| 10. When people say that they take drugs because they feel anxious and helpless it is just an excuse | 69 (63.3) | 45 (54.2)  | 114 (59.4) |
| 11. Anybody can become addicted to drugs when they get off the straight and narrow | 50 (45.9) | 48 (57.8)  | 98 (51.0)  |
| 12. Drug use is an excuse for not doing the things that you are supposed to do | 59 (54.1) | 35 (42.2)  | 94 (49.0)  |
| 13. Addiction is for life: once you start, it will never go away, no matter what you do | 10 (9.2)  | 24 (28.9)  | 34 (17.7)  |

The raw data set was evaluated, cleaned and the complete data set was captured into Microsoft Excel® (Microsoft Corp, Redmond, WA, USA) before importation into Epi Info® (CDC, Atlanta, GA, USA) for analysis. Demographic data were analysed descriptively making use of univariate analysis. Bias was minimised by reassuring participants that there were no right or wrong answers. Participation was voluntary and anonymous without any coercion and participation did not affect the eligibility of the nyaope user to receive rehabilitation services. Ethical clearance was obtained from the Medunsa Research and Ethical Committee (MREC/H/127/2014: PG), the Gauteng Department of Social Development and South African National Council on Alcoholism and Drug Dependence (SANCA) management.

A total of 71.9% participants (159/221) indicated that they had tried to stop using nyaope before but all of them relapsed after some time. The details of the period that the users were able to stop linked to their LOC orientations are presented in Table 4.

Discussion

Although drug addiction is a treatable disease, the reality is that a relapse is not only a possibility but a likely event due to the chronic nature of addiction. This is evident where 71.9% of the study participants previously tried to stop using nyaope on their own, with only 10.1% being able to stop using nyaope for a period longer than a year before relapsing again. The severe withdrawal symptoms, which can present as severe abdominal cramps, diarrhoea or flu-like symptoms, and which can last for four to six days, are one of the reasons why it is difficult for nyaope users to stop. Furthermore due to the socioeconomic status of the participants where 89.6% of participants had no formal means of income, even if they do wish to stop using nyaope, rehabilitation is not an option due to the cost of the treatment. Being unemployed is also the start of a vicious circle where unemployment contributes to drug use while drug abuse increases the chances of the user losing his/her job, decreasing his/her chances of gaining employment ever again, which in turn contributes to further drug use aggravating the circle of poverty.
appropriate treatment programme, which eventually could lead to a better success rate in rehabilitation than the rate of less than 3% as reported. As the LOC orientation of the drug user is found to shift over the course of treatment the LOC score of a drug user on treatment could also be used as a viable indicator for treatment progress.

**Conclusion**

Due to the large number of addicts, the socioeconomic status of the users and the lack of adequate rehabilitation services there is a need in South Africa to accommodate groups of people rather than individuals. Part of such a strategy should be the consideration of the LOC orientation of the user, which can be used practically in predicting the treatment outcomes based on a tailor-made rehabilitation intervention programme that fits the LOC orientation of the drug user.

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**Table 3:** LOC scores indicative of LOC orientation of nyaope users (n = 192)

| LOC orientation | LOC score | Rehab n = 109 (%) | Street n = 83 (%) | Total n = 192 (%) |
|-----------------|-----------|-------------------|------------------|------------------|
| Internal        | 13        | 1 (0.9)           | 2 (2.4)          | 3 (1.6)          |
|                 | 14        | 3 (2.8)           | 1 (1.2)          | 4 (2.1)          |
|                 | 15        | 16 (14.7)         | 8 (9.6)          | 24 (12.5)        |
|                 | 16        | 19 (17.4)         | 5 (6.0)          | 24 (12.5)        |
|                 | 17        | 19 (17.4)         | 16 (19.3)        | 35 (18.2)        |
|                 | 18        | 19 (17.4)         | 17 (20.5)        | 36 (19.8)        |
|                 | 19        | 11 (10.1)         | 8 (9.6)          | 19 (9.9)         |
| **Total**       |           | 88 (80.7)         | 57 (68.7)        | 145 (75.5)       |

| External        | 20        | 11 (10.1)         | 13 (15.7)        | 24 (12.5)        |
|                 | 21        | 6 (5.5)           | 5 (6.0)          | 11 (5.7)         |
|                 | 22        | 3 (2.8)           | 5 (6.0)          | 8 (4.2)          |
|                 | 23        | 1 (0.9)           | 1 (1.2)          | 2 (1.0)          |
|                 | 24        | 0 (0.0)           | 0 (0.0)          | 0 (0.0)          |
|                 | 25        | 0 (0.0)           | 2 (2.4)          | 2 (1.0)          |
|                 | 26        | 0 (0.0)           | 0 (0.0)          | 0 (0.0)          |
| **Total**       |           | 21 (19.3)         | 26 (31.3)        | 47 (24.5)        |

**Table 4:** Period for which users were able to stop using nyaope linked to LOC orientation (n = 159)

| Time stopped          | Number | %   | Internal LOC | %   | External LOC | % |
|-----------------------|--------|-----|--------------|-----|--------------|---|
|                       | n      |     | n            |     | n            |   |
| Less than 7 days (a week) | 32    | 20.1 | 20           | 17.1 | 12           | 28.6 |
| 8–30 days (a month)     | 28     | 17.6 | 21           | 17.9 | 7            | 16.7 |
| 31 days to < 6 months   | 51     | 31.1 | 36           | 30.8 | 15           | 35.7 |
| 6 months to less than a year | 18    | 11.3 | 13           | 11.1 | 5            | 11.9 |
| 1 to 2 years           | 13     | 8.2  | 11           | 9.4  | 2            | 4.8  |
| More than 2 years      | 3      | 1.9  | 3            | 2.6  | 0            | 0.0  |
| Did not indicate how long | 14    | 8.8  | 13           | 11.1 | 1            | 2.4  |
| **Total**              | 159    | 100.0 | 117          | 73.6 | 42           | 26.4 |

Literature describes the strong relationship between external LOC orientation and addictive behaviour. Due to the fact that a person’s LOC orientation is rather stable and influences his/her approach to problems, knowledge of a user’s LOC orientation becomes highly relevant when recovering from a drug addiction. When a person’s LOC orientation is in conflict with a treatment approach the programme is almost certain to fail with chances of success much higher if the treatment programme matches the specific LOC orientation of the drug addict. The high number of participants with an internal LOC orientation in this study is an indication that the majority of these nyaope users were prepared to take responsibility and are able to take the decision to improve their situation if and when given the opportunity.

Unfortunately just partaking in a rehabilitation programme is also no guarantee for success as it has been shown that the best way to ensure rehabilitation achievement is a tailor-made addiction treatment programme that addresses each patient’s drug-abuse patterns and drug-related medical, psychiatric and social problems. Therefore determining the LOC orientation of a nyaope user could guide the rehabilitation centre to an appropriate treatment programme, which eventually could lead to a better success rate in rehabilitation than the rate of less than 3% as reported. As the LOC orientation of the drug user is found to shift over the course of treatment the LOC score of a drug user on treatment could also be used as a viable indicator for treatment progress.

**Conclusion**

Due to the large number of addicts, the socioeconomic status of the users and the lack of adequate rehabilitation services there is a need in South Africa to accommodate groups of people rather than individuals. Part of such a strategy should be the consideration of the LOC orientation of the user, which can be used practically in predicting the treatment outcomes based on a tailor-made rehabilitation intervention programme that fits the LOC orientation of the drug user.

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