Relationship between Locus of Control and Adherence to Alcoholic Anonymous Meetings among Persons Recovering from Substance Abuse in Nairobi County, Kenya

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ABSTRACT

One of the most familiar after care programs engaged in by persons recovering from substance abuse addiction to help sustain abstinence is the Alcoholics Anonymous (AA) programs. Nevertheless, rehabilitees need to adhere to them in order to help achieve long-term abstinence. Locus of control has been shown to be associated with adherence to treatment modalities but limited studies have done on adherence to substance abuse support groups especially Alcoholic Anonymous groups because of anonymity Principe. The study therefore focused on establishing the relationship between locus of control and adherence to alcoholic anonymous group meetings. Snow ball was used to identify contact persons and access groups. Total of 90 members assented to participate in the study. Despite the popular notion that members of alcoholic anonymous groups lean towards externality, the difference between those who leaned towards internal and external locus of control was minimal. A majority of 51.5 % respondents had high levels of external locus of control compared with 48.9% who scored more on external locus of control. A positive relationship was noted between moderate levels of internal locus of control and adherence, r (16) = .548, p<0.05.

Key words
Locus of control, Alcoholic Anonymous, abstinence, support groups, persons recovering from addiction

Introduction

World Health Organization defines substance abuse as a harmful or hazardous use of drugs or alcohol. Substance abuse is prevalent worldwide and negatively affects physical, psychological, social, legal, vocational, familial, educational, and other areas of life functioning (Donovan,Ingalsbe,Benbow,&Daley,2013).Majority of those affected seek treatment in rehabilitation centres in an attempt to curb the problem.

Substance abuse treatment help the victims change their attitudes, beliefs, and behaviours towards substance abuse, refrain from substance use and avoid relapse. This in turn help them reclaim their life functioning which had been ruined by the abuse. A number of therapeutic modalities have proved to be effective at addressing drug and alcohol abuse and in improving related functioning. However treatment gains are often short lived. Rates of relapse after remission continue to be experienced.

A report on relapse in United States of America by National Institute on Drug Abuse; NIDA (2018), indicates that relapse rates varies from 40% to 60% and can be equated to those affected by chronic illnesses like Type 1 (one) diabetes, hypertension, and asthma. This indicate that relapse rate is still high despite rehabilitation. Manejwala (2014) found that only about a third of people who were abstinent less than a year remained abstinent in an eight year study done in United States among 1200 addicts. For those who achieved a year of sobriety, less than half were likely to relapse and those who made it to 5 years of sobriety, chances of relapse were less than 15 percent.

This indicate that the longer the period of abstinence the lower the risk of relapse. The focus should therefore be on promoting long-term abstinence. Post treatment support programs perform the function of continuing treatment or after care offering support and skills to deal with the potential triggers of relapse. However, recovering persons need to adhere to these programs to experience maximum benefits. Promoting the factors that enhance adherence is therefore a valuable undertaking.

Statement of the Problem

Despite many rehabilitation centres and support groups including Alcoholic Anonymous being setup rates of relapse after remission continue to be high. (NIDA, 2012: Kuria, 2013 and Chepkwony, Chelule and Barmao, 2013). Locus of control is known to influence behaviour change processes such as drugs and alcohol addiction. It is known to influence adherence to treatment programs especially in the medical field programs. However its relationship with adherence to drugs and alcohol support groups especially Alcoholic Anonymous support groups is scarcely documented .It's expected that enhancing adherence to support groups will prevent relapse which has been observed to be high. It's therefore important to study factors that can help in sustaining adherence and therefore promote long term abstinence. Locus of control is one such factor.

Purpose of the Study

The purpose of this study is to establish if there is any relationship between locus of control dimensions and adherence to Alcoholic Anonymous groups among persons recovering from drugs and alcohol in Nairobi County, Kenya.

Theoretical Framework

Locus of control theory served as the theoretical framework for this study. This theory helped in understanding how client's adherence to support group programs is influenced by their perception of what controls their behaviour. Locus of control has been shown to be associated with health behaviours including adherence to treatment modalities. The concept of Locus of Control was derived from the Social Learning Theory by Jullian Rotter. Rotter defined locus of control as the degree of control to which individuals believe they have over the outcome of certain situations (Mali, 2013). A person who believe that he or she has control over his/her life events is said to have an internal locus of control while the one who believes that he or she is controlled by luck, chance, fate or powerful others (heath professionals, family, friends) is said to have an external locus of control.

Persons with an external locus of control relate events, situations, success and failures to factors not related to them while individuals with internal locus of control strongly believe in themselves and their abilities. They believe that they can influence the outcomes of their work with their efforts, skills and characteristics (Naik, 2015). In this case an individual is likely to participate in the Alcoholic Anonymous meetings and activities if they believe their participation and effort will contribute to improvement on their sobriety and they perceive it to be desirable. If the individual perceive the improvement to be the result of chance or fate rather than their participation ,this could make them believe it's not their behaviour (participation) that led to the outcome (improved sobriety).They are likely to see no need of attending the Alcoholic Anonymous meetings.

(Foot,2016) states that individuals with high internal locus of control and low external locus of control are more likely to exhibit better self-management of addiction. Adhering to support groups such as Alcoholic Anonymous is one way of managing addiction. A feeling of sense of control of one's addiction may therefore increase the likelihood of engaging in sobriety promoting behaviours such as attending Alcoholic Anonymous meetings. A study of DTR, Magura found that the relationship between DTR affiliation and abstinence was mediated by internal locus of control, which included internal motivation to change, coping skills, and self-efficacy (Magura, 2008 cited in Kelly & Yeterian)

Rotter (1975) cautioned that internality and externality represent two ends of a continuum, not an either/or typology. There is another type of control that entails a mix among the internal and external types. People that have the combination of the two types of locus of control are often referred to as Bi-locals. People that have Bi-local characteristics are known to handle stress and cope with their diseases more efficiently by having the mixture of internal and external locus of control.

People that have this mix of loci of control can take personal responsibility for their actions and the consequences thereof while remaining capable of relying upon and having faith in outside resources; these characteristics correspond to the internal and external loci of control, respectively. An example of this mixed system would be an alcoholic who will accept the fact that he brought the

disease upon himself while remaining open to treatment and/or acknowledging that there are people, mainly doctors and counsellors, that are trying to cure his/her addiction and on whom he should rely on. Therefore this study focused on various levels of either type.

Locus of control is known to be an important construct in predicting behavior and behavior change including alcohol and drug use. This is because it enhances motivation to change and therefore influences adherence to the programs.In a rehabilitation context an individual's type and level of locus of control determines his or her perception of who is responsible for his or her change process. This in turn determines how he/she perceives the rehabilitation programs and how he/she responds to them**.** If they perceive themselves to be responsible (internal locus of control) they will be motivated to adhere to the programs with the belief that their efforts will bring the desired outcomes but if they perceive others to be in control they will perceive the programs negatively and will lack the motivation and eventually resign from making any attempt to adhere to the programs.

Literature Review

The ultimate goal of substance abuse rehabilitation is achievement of long term sobriety and prevention of relapse. However studies have found that relapse rates continue to be high. Manejwala (2014) found that only about a third of people who were abstinent less than a year remained abstinent in an eight year study done in United States among 1200 addicts. For those who achieved a year of sobriety, less than half were likely to relapse and those who made it to 5 years of sobriety, chances of relapse were less than 15 percent. This indicate that the longer the period of abstinence the lower the risk of relapse. The focus should therefore be on promoting long-term abstinence by promoting factors that maintain abstinence. Kassani,Nazi,Hassanzadeh and Menati (2015) indicated relapse rates of 30.42% among 140 self-referred addicts in four addiction centers in Ilam city, Iran. They further illustrated that the risk of relapse increased with time. Assessment at 6 months showed that survival rate was 83% compared to 46% at 24 months. In Kenya, Kuria (2013) reported that respondents between 20% and 80% in selected rehabilitation centres indicated relapse incidences. Chepkwony, Chelule and Barmao (2013) in their study in selected rehabilitations found that almost half of the respondents suffered from relapse, that is 43% compared to 57% of those who were in rehabilitation centres for the first time. This trend raises concern on the effectiveness of rehabilitation programs and the need to explore factors that would promote success of rehabilitation.

Relapse can be attributed to various factors. One of them is its chronic nature. Substance abuse is defined as a chronic relapsing condition. Hence relapse is not a rare situation and persons recovering from substance abuse are prone to relapse. Recovering persons are also surrounded by powerful temptations including enticing media commercials, billboards advertisements and other propaganda selling alcohol and peer influence outside rehabilitation centres. Often times, these urges are too difficult for the recovering alcoholic to resist. The problem is further compounded by factors within themselves.

Washington and Zebwen (2011) cited factors such as positive and negative moods, inadequate coping and problem solving skills and lingering withdrawal including anhedonia and dysphoria. Also included are conscious and unconscious motivations to use mood altering substances again, including shame, guilt and residues of earlier trauma and abuse. Relapse is detrimental to the

recovering person, family and rehabilitators. It can lead to doubts on the recovering person's capability and self-efficacy, sense of hopelessness and resignation to fate further complicating recovery.

Persons recovering from substance abuse thus goes through a great deal of stress when dealing with the pressure to remain abstinent amidst all the temptations. The chronic relapsing nature and the temptations hence necessitates ongoing episodes of care over many years to achieve full sustained remission. (Kelly and Yeterian, 2011)

The successes gained in the rehabilitation may remain a mirage if efforts are not put in place to help curb these challenges in order to sustain the rehabilitation achievements outside the confines of a protected rehabilitation centres and prevent relapse. There is need for a reliable post-treatment support group program to depend on (Orey, 2015).

Post treatment support programs perform the function of continuing treatment or after care offering support and skills to deal with the potential triggers of relapse. Persons recovering from addiction are helped to put their new found skills to practical skills with the support of peers as they return to the community (Nzomo, 2013). Regular attendance to such programs among like-minded people where members feel comfortable and supported may help in sustaining the gains obtained during inpatient treatment (Gossop, 2003). Increased involvement in after care programs following formal treatment serve as an important source of support and a form of continuing care .This can to lead sustained abstinence and prevention of relapse and eventual to reduced utilization of substance abuse treatment services and associated costs for the families and society**.**

One of the most familiar after care program engaged in by persons recovering from substance abuse addiction to help prevent relapse is the Alcoholics Anonymous (AA) programs (Miller, 2015). Participation in Alcoholic Anonymous support groups has been associated with positive long-term outcomes either as an adjunct to formal treatment, or as a form of continuing care and community support following treatment (Donovan , Ingalsbe, Benbow, & Daley,2013))

Meeting attendance and fellowship with other recovering persons at 12-step meetings is one of the cornerstones of the 12-step recovery program and is associated with stable abstinence. However this can be enhanced through other suggested practices representing 12-step affiliation, such as having a sponsor, working the 12-steps, having a home group, reading 12-step recovery literature and doing service. With these activities Alcoholic Anonymous groups plays a vital role in assisting people recovering from substance abuse and is widely believed to be an effective intervention especially for alcoholism (Gossop, Harris, Best, Man,Manning,Strang,2003).

Nevertheless availability of Alcoholic Anonymous programs is not sufficient. Rehabilitees need to adhere to the program and its specific activities for them to benefit. Adherence is a primary determinant of treatment success in all medical spheres, drug and alcohol abuse included. World Health Organization (WHO, 2003) cited in Jimmy and Jose, (2011) define adherence as the extent to which an individual's behavior corresponds with the agreed recommendations from a health care provider. The client observes the laid down procedures that are believed to effect benefits of the treatment procedures.

Adherence to Alcoholic Anonymous has been associated with positive outcomes. Regular contact and increased involvement with AA has been associated with maintaining the benefits initially accrued from inpatient treatment programmes and serve as an important source of support and a form of continuing care. Increased abstinence has been reported among those attending AA following substance abuse treatment and lower rates of relapse have been found to be associated with more frequent attendance at AA. After leaving the inpatient treatment service, and during the follow-up period, those who attended AA on a weekly or more frequent basis reported drinking less

frequently and in lower amounts. Weekly or more frequent AA attenders also reported the greatest reductions in percentage drinking days. (Gossop, Harris, Best, Man, Manning &Strang,2003) Consistent, early, and frequent attendance/involvement (e.g., three or more meetings per week) is associated with better substance use outcomes.

Donovan , Ingalsbe, Benbow, and Daley,2013) states that although even small amounts of participation may be helpful in increasing abstinence, higher "doses" may be needed to reduce the likelihood of relapse. Engaging in other 12-Step group activities (e.g., doing service at meetings, reading 12-Step literature, doing step work, getting a sponsor, or calling other 12-step group members or one's sponsor may be a better indicator of engagement and a better predictor of abstinence than merely attending meetings. Therefore it's important to focus on factors that enhance adherence to Alcoholic Anonymous support group's activities for better abstinence outcomes.

Research Hypothesis

$H0_1$ There is no significant relationship between locus of control and adherence to rehabilitation programs among persons attending Alcoholic Anonymous in Nairobi County.

Research Methodology

The study used an Ex-Post Facto Correlation Research Design to generate both quantitative and qualitative data**.** The study used multi-stage sampling technique. In the first stage, purposive sampling was used to select Nairobi County as one of the counties with established Alcoholic Anonymous group meetings. The open meetings were purposively utilized in line with Alcoholic Anonymous principles which strictly uphold anonymity. Snowballing sampling method was used to recruit initial contact persons. Snowballing is a process of using networks in selecting study participants (Kumar, 2005). Engel and Schutt (2009) state that snow ball sampling method is suitable when it is hard to reach and identify respondents such as members in Alcoholic Anonymous.

Research Instruments

Two types of research instruments, a questionnaire and a focus group discussion guide were utilized to collect data. The questionnaire comprised of Recovering Addicts Locus of Control Scale (RALCS) and The Recovering Addicts Adherence Scale (RAAS). Recovering Addicts Locus of Control Scale (RALCS) was employed to assess whether recovering addicts had more of internal or external locus of control. The scale was adapted from the Multidimensional Health Locus of Control Scale (MHLCS) Form C. MHLCS was chosen because addiction is a medical and a health condition. Sanz (2014), state that the scale can be easily adapted to assess individual's beliefs on what influences their functioning's in relation to any medical or health related condition. Drugs and alcohol addiction is both a medical and health condition. Recovering Addicts Locus of Control Scale (RALCS) contained 18 belief statements about addiction, 9 items represented external while the other 9 represented internal locus of control. They were assessed in a six point Likert scale.

The Recovering Addicts Adherence Scale (RAAS) was adapted from the Alcoholics Anonymous Affiliation Scale by Humphreys, Kaskutas and Weisner (1998). Adherence was measured with regard to early commencement after rehabilitation which was assessed through self -reports using a

yes and no question. The respondents were then asked about their frequency of attendance and participation in groups meeting activities.

Participants

A total of 90 respondents participated in the study by responding to the questionnaires. Twenty four of them participated in the focus group discussion. Majority of the respondents were male (66.7%), compared to 28.9% females. 41.1% of the respondents were aged between 26 to 35 years while 12.2% were 51 years and above. 48.9% of the participants were single, 23.3% were married while 7.8% were divorcees.

Data Analysis

Data collected was gleaned, organized, coded and analysed using the statistical package for the Social Sciences (SPSS) software version 23. Descriptive statistics in form of frequencies and percentages were used to summarize and analyse data while Pearson's Product Moment Correlation Coefficient was utilized to establish relationships. To determine whether the respondents had an internal or external locus of control, cumulative scores were derived where the possible minimum score one could get was 18 and the maximum score one could get was 108. The scores were further divided into 2 main categories, where scores ranging from 18-63 represented external locus of control and scores from 64-108 represented internal locus of control.

The scores were further subdivided into 3 levels for each type of locus of control. Scores falling from 18 to 27 represented high levels of external locus of control, 28-45 represented moderate levels of external locus of control and scores ranging from 46-63 represented low levels of external locus of control. For internal locus of control, scores ranging from 64-81 represented low level of internal locus of control, 82-99 represented moderate level of internal locus of control and scores from 100-108 represented high levels of external locus of control.

Composite scores from Recovering Addicts Adherence Scale (RAAS) were derived from the scale where the minimum possible score was 4 as per the number of items in the instrument. The lowest level (never) had a score of one while the highest possible score (Very often) had a score of 5. The scores were divided into 3 levels, where scores between 4 and 9 represented low adherence level, scores between 10 and 14 represented moderate adherence level and scores between 15 and 20 represented high level of adherence.

Results of the Study

First the researcher sought to determine whether the respondents scored more on an internal or external locus of control. A majority of 51.5 % respondents had high levels of external locus of control compared with 48.9% who scored more on internal locus of control. Descriptive Statistics indicated that the minimum score attained by respondents from Nairobi County was 32 while the maximum was 101. The mean score was 66.57(SD=15.015) indicating an internal locus of control (64-81). It was found necessary to study the various levels of internal and external locus of control. The findings showed that 46.7% of the respondents had high external locus of control levels, while 28.9% and 17.85 had low levels and moderate levels of internal locus of control respectively.

Comparisons of Locus of Control Levels by Gender showed that 56. 7% of males had an internal locus of control while 69.2% of females had an external locus of control. Comparisons of Locus of Control Levels by age showed that mmajority of the respondents aged between 26-35 years and 36-50 years had an internal locus of control, 51.4% and 55% respectively while 57.1% of those aged between 18 and 35 and 45.5% aged 50 years and above had external locus of control respectively.

Adherence to Rehabilitation Programs

In assessing adherence to support groups, respondents were asked to indicate whether they had started attending group meetings immediately, their frequency of attendance and participation in the groups.Results on immediate attendance to support group meetings (within three months) showed that majority of respondents (62.2%) started attending support groups immediately after rehabilitation. Results on frequency of attendance and participation in the groups are presented in the following table:

Table 1.
Respondent's Adherence to Support Group Programs

Program	County Nairobi	Never		Rarely		Sometimes		Often		Very often	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
How often do you attend support group meetings		0	0.0	12	13.3	34	37.8	27	30.0	15	16.7
How often do you do service in the support group meetings		5	5.6	20	22.2	21	23.3	30	33.3	12	13.3
How often do you read literature related to recovery from alcohol and/or drugs		7	7.8	10	11.1	34	37.8	18	20.0	19	21.1
How often do you communicate with other members of the group		1	1.1	15	16.7	28	31.1	22	24.4	21	23.3

Majority of respondents ,37.8% indicated that they were attending support group meetings some of the times, 31.1% of respondents sometimes communicated with each other and 30% often performed service during the meetings. This shows that those attending AA meetings had more opportunities to be involved during the meetings. This may be because the main agenda for AA meetings is addiction and abstinence. The levels of adherence were also assessed.The findings showed that the lowest adherence level attained by the respondents was 7 while the highest score was 20. The mean score of adherence was 13.65 (SD=3.633) indicating a moderate level of adherence.Correlation results show that there is relationship between External Locus of Control and Adherence as demonstrated in the table below**.**

Table 2.

Relationship between External Locus of Control and Adherence

County			Adherence
Nairobi	External locus of control	Pearson Correlation	.317**
		Sig. (2-tailed)	.002
		N	90

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

A statistically significant positive relationship between external locus of control and adherence for respondents in Nairobi County, r (141) = .317, p<0.05 was observed.

Relationship between Levels of Locus of Control and Adherence

County			**Adherence**
Nairobi	Moderate external	Pearson Correlation	-.070
		Sig. (2-tailed)	.955
		N	3
	High external	Pearson Correlation	.234
		Sig. (2-tailed)	.141
		N	41
	Low internal	Pearson Correlation	.191
		Sig. (2-tailed)	.350
		N	26
	Moderate internal	Pearson Correlation	.548*
		Sig. (2-tailed)	.028
		N	16
		N	16
	High internal	Pearson Correlation	.c
		Sig. (2-tailed)	.
		N	2

*. Correlation is significant at the 0.05 level (2-tailed).

c. Cannot be computed because at least one of the variables is constant.

The results also showed that there was a statistically significant weak positive relationship between moderate level of internal locus of control and adherence, r (16) = .548, p<0.05.

Difference between Persons with Internal Locus of Control and External Locus of Control on indicate that respondents with high internal locus of control scored higher (M = 14.14, *SD* = 3.495) than respondents with external locus of control (M = 12.59, *SD* = 4.554) on adherence.

Strategies that would Facilitate Achievement of Better adherence

The people considered to be most important were peers (27.2%) followed by family members indicated by 24.8% of the respondents and religious leaders with 10.7%. These significant others were expected to provide moral support as indicated by 41.4 respondents while financial support was indicated by 13.8% % and scheduling of the meetings on weekend by 13.5% in order to continue adhering to support group programs. The patients on their side indicated that they needed to actively participate in the rehabilitation programs and be committed on attendance as indicated by 34.8%.

Discussions

The internal locus of control appear to increase during early adulthood and middle adulthood then decrease with onset of old age. This is supported by existing literature for instance a longitudinal study done by Gatz and Karel (cited in Johnson et al., 2004) .They indicated that internality may increase until middle age, decreasing thereafter. Schultz and Schultz (2005) also suggests that locus of control increases in internality until middle age. Comparison of a young child with an older adult on their levels of locus of control in regards to health, indicate that the older persons have more control over their attitude and approach to the situation. As people age they become aware of the fact that events out of their own control happen and that other individuals can have control of their health outcomes.

The results of this study further suggest that there were gender differences in terms of locus of control. This concur with the existing literature. Using a Multidimensional Health Locus of Control form-C on clients from alcohol `dependence treatment centres in the West of Scotland, Independent *t*-tests results indicated that out of one hundred and eighty-eight (53% females) participants recruited from a variety of alcohol dependence treatment centres with majority of participants (72%) coming from Alcoholics Anonymous groups, women exhibited more internal locus of control compared with men. Women also had a greater 'significant others' locus of control score than men. Men were more reliant on 'chance' and 'doctors' than women. All these trends were not, however, statistically significant. (Mcpherson, 2016)

Results also show evidence of majority members who reported immediate attendance to support groups after rehabilitation. It's likely that the rehabilitees were informed and educated about the support groups meetings during the residential rehabilitation and thus were able to start attending immediately within three months period. According to Ludet, Savage and Mahmood (2002), 12-step affiliation patterns are often set early when clients are still in treatment centres.

The results also show a moderate level of adherence to support groups. This can be explained by the fact that in Nairobi County, the Alcoholic Anonymous group meetings are hosted mainly in churches across the county with varied meeting schedules convenient for the members. Some members were in half-way houses which also hosted Alcoholic Anonymous meetings. This make it convenient for willing recovering persons attend meetings at their convenience.

Though attendance to meetings is vital, involvement and participation in the activities is equally important. Majority of respondent's participation in the activities enlisted was on the moderate level (some of the time). Active involvement provide more opportunities for members to learn from peers during and after the meetings. The results from focus group discussions support this view where respondents said that from the support group meetings they were able to support each other, get advice from others, get new ideas and continue to be sober. Tracy and Wallace (2016) suggest that active engagement in peer support groups is a key predictor of recovery and sustaining recovery.

The results from this study indicate that majority of those attending the 12 step programs lean towards externality. This is contrary to existing literature which indicate that recovering persons have more internal locus of control compared to persons who are yet to be rehabilitated. Rehabilitation program attended may have had an influence on the dimension of locus of control promoted. Studies have demonstrated that the existence of certain group affiliation, is a factor that

influenced the type of locus of control. As the affiliation increases group dependency grows further and at the same time the internal locus of control goes down.

Apart from the influence of the group dependency literature shows that Alcoholic Anonymous adheres to the disease model of addiction. This model views persons suffering from addiction as powerless over their addiction. According to Linquist (2013), disease model can create a self-fulfilling prophecy in which people view themselves as sick and consequently behave in a sick manner. In essence the addicts attribute their addiction to fate, an external factor beyond their control thus downplaying their responsibility in the recovery process.

The findings show that respondents with high levels of external locus of control are more likely to adhere to support groups than those with high levels of internal locus of control among members of Alcoholic Anonymous. This is contrary to popular perception that a belief in external control results to negative effects. Therefore, reliance on external others can have positive effects on adherence. This is supported by Bosworth and Oddone (2006) who clarify that this is where the health care providers are reliable and effective. Waterhouse (2016) also observed positive influence of external locus of control on adherence among persons attending Alcoholic Anonymous meetings. They stated that alcoholics who expressed greater beliefs on powerful others in relation to their health, attempted treatment more often than those with greater beliefs on internal control or chance. They also maintained contact with alcoholic anonymous longer.

The study also showed that there exist a positive relationship between moderate levels of internal locus of control and adherence. The implication is that increasing levels of internal locus of control to moderate level correlates with more positive outcomes in terms of adherence. It is thus likely that ascribing to Alcoholic Anonymous groups does not conflict with internal locus of control and the two dimensions can be utilized to complement each other. Low levels of internal locus of control can be complemented with external locus of control and vice versa.

Role of external factors was also emphasized where peers, religious leaders and family members were reported as key in achieving adherence. Their role include giving advice, moral and financial assistance in starting income generating activities. According to SAMHSA (2018) having relationships and social networks that provide support, friendship, love, and hope is a major support to recovery. The importance of family is also emphasized by Abiama, Abasiubong, Usen and Alexander (2014) who blame family for high rate of relapse. They state that high rate of relapse is experienced because family has failed to exercise its good care giving and regulatory role. Laudet, Savage and Mahmood (2002) state that support from peers, family and friends is an important factor in recovery since they provide hope, coping strategies, strength in trying time and role models.

Conclusion and Implications for Rehabilitation Counselling

Both dimensions to some levels facilitate adherence to a certain extent. Therefore the null hypothesis was rejected and alternate accepted. There is need to use both dimensions to complement each other. In essence the study findings show that to some extent both external and internal locus of control have an influence on adherence. In conclusion internal and external locus of control can be said to be two different dimensions with distinctive responsibilities in controlling adherence and can be used to complement each other. This leads to following implications to counselors dealing with persons recovering from alcohol and drugs addiction.

There is need to design assessment tools for personality and perceptions of locus of control in relation to drugs and alcohol addiction and recovery. The assessment tools can be used together with other assessment tools by counsellors in the rehabilitation centres and support groups.

There is need to assess for locus of control on admission to rehabilitation and support group centres. This would help predict the rehabilitees' behaviour during rehabilitation and plan intervention measures for specific behaviours. Different behaviours are caused by specific factors which could be internal or external. Assessment should continue throughout the treatment stages to determine the progress and effectiveness of the programs.

Understanding the rehabilitees' motivational factors would help to determine the types of programs suitable for specific clients. The, counsellors and rehabilitators need to determine the specific locus of control factors that motivate the persons adherence and recovery from addiction.
The differences found between men and women regarding the locus of control, suggest that when designing any intervention that aims to strengthen the locus of control there is need to take into account the gender variable.
To promote high adherence there is need to provide information on recovery resources after treatment to ensure the respondents attend and participate in the support group activities after rehabilitation for continuum of care.

Limitations of the Study and Future Research

The current study used an ex-post facto research method to establish the relationship between locus of control and rehabilitation outcomes among persons recovering from addiction .There is need to conduct an experimental study to establish a causal relationship.

Because locus of control and adherence can be modified through rehabilitation programs, there is also need to carry out a longitudinal study to identify changes over various stages of rehabilitation. Longitudinal study is also helpful in establishing whether the trend continue to be positive throughout the recovery process.

A further study on the role of specific factors of internal and external locus of control is necessary to establish the specific factors that promote rehabilitation outcomes. This has been necessitated by the contradictory findings related to internal locus of control and adherence.

The study found differences among males and females in the type of locus held. There is need to study the interaction of gender and locus of control in relation to rehabilitation outcomes.

A research on the effectiveness of Alcoholic support groups is also important. This would provide empirical evidence on the advantages of peer support integration within the treatment continuum.

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