

The role of keystone species in ecosystem stability and function

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Abstract

Keystone species play a critical role in maintaining the structure, stability, and functionality of ecosystems. These species have a disproportionately large impact on their environment relative to their abundance. This review paper explores the concept of keystone species, their ecological roles, and the mechanisms through which they influence ecosystem dynamics. It also discusses case studies of keystone species in various ecosystems, the consequences of their removal, and the implications for conservation and ecosystem management.

Keywords: Disadvantaged, methamphetamine, demonstrated

Introduction

Non-formal education (NFE) is not a replacement for formal education. It complements formal education by covering needs or certain aspects that regulated institutions lack. Non-formal education helps to ensure equal access to education, eradicate illiteracy among women, and improve women's access to vocational training, science, technology, and continuing education. It encourages the development of non-discriminatory education and training. Non-formal education ensures that all programmes have access to education. It serves people of all ages but does not always follow a linear path or structure. It is provided in the form of short courses, workshops, or seminars.

Non-formal education can lead to qualifications that aren't recognized as formal qualifications by the relevant national educational authorities or to no qualifications at all. Non-formal education covers programmes contributing to adult and youth literacy and education for out-of-school children, as well as programs on life skills, work skills, and social or cultural development (UNESCO Institute of Statistics, 2011) ^[12]. Non-formal education in this paper implies out-of-school education designed to sensitize Anambrarians to the inherent dangers of illicit drugs in order to contain their use. All of these organized education activities aim to raise awareness about illegal drugs and discourage people from using them in order to reduce Anambra State's rising consumption.

Illicit drugs are substances that stimulate or inhibit the central nervous system of the taker. They refer to highly addictive and illegal substances such as Heroin, Marijuana, and Meth. According to the National Drug Strategy Household Survey report (2007) ^[6], illicit drugs are illegal drugs, prescription or over-the-counter pharmaceuticals used for illicit purposes, and other substances used inappropriately. Illicit drugs such as Meth and Cocaine make people venture into prostitution, robbery, and kidnapping, among others. It is very imperative to fight the rising consumption of illicit drugs to promote security as well as economic sustainability in Anambra State. The fight is very important because the consumption of illicit drugs limits the chances of entering or remaining in the workforce. Illicit drugs distort perception, compromise a clear judgment of situations, and impair decision-making and responses (Schmitts, Lamers, Kuypers, Ramaekers & Riedel, 2007)

^[10]. They make people run mad or drop out of school, among others.

The rising consumption of illicit drugs should be contained to save lives and ensure economic sustainability in Anambra State. From the researcher's viewpoint and the literature, it seems that people have not been sensitized properly to the dangerous effects of illicit drugs. Thus, this paper intends to add to knowledge by looking at the programs of non-formal education that could be used to sensitize Anambrarians about illicit drugs and their possible havoc. Non-formal education programs are antidotes to the spread of illicit drugs. The antidotes in this paper are seen as solutions to the rising consumption of illicit drugs in Anambra State. This paper will be discussed under the following subheadings:

What is non-formal education?

All organized educational activities that take place outside of the formally established system are considered non-formal education. It is open to any age, origin, and personal interest. It is a voluntary type of education with diverse teaching methods, and its end goal is not a degree but rather pure learning. Non-formal education (NFE) is flexible and simple and can be delivered at any place that is convenient to the learners. It is designed to meet the needs of individuals, disadvantaged communities, marginalized groups, and economic sections of society. The learners are not expected to abide by any rules or regulations. Similarly, according to Rogers (2019), NFE is any organized educational activity outside the established formal system, whether operating separately or as an important feature of some broader activity that is intended to serve identified learning clienteles and learning objectives. It helps to ensure equal access to education. In this paper, non-formal education is seen as the solution to the rising consumption of illicit drugs in Anambra State. It is all organized education activities designed to sensitize Anambrarians on the dangerous effects of illicit drugs and contain the rising consumption of them in Anambra State, which will invariably reduce the rate of insecurity and other social vices in the state.

Illicit Drugs in Anambra State

An illicit drug is defined as any drug that is illegal to possess or use, or any legal drug used in an illegal manner.

Illicit drugs are drugs obtained on prescription but given or sold to another person to use. Illicit drugs fall into two categories. The first category involves drugs that are illegal to process, sell, and consume, such as cocaine, heroin, and methamphetamine. The second category involves drugs that are legal to process, sell, and consume, such as prescription pain medication and prescription sedatives. In addition, illicit drugs refer to highly addictive and illegal substances such as cocaine, heroin, marijuana, and meth. In Anambra State, the increasing addiction to illicit drugs by youths has reached a worrisome crescendo. However, youth leaders in some communities have risen to fight the rising consumption of illicit drugs, especially crystal meth (mkpurummiri) which is touted to be the root cause of armed robbery, rape, and other crimes (Eleke in This Day Newspaper, November 29, 2021).

Many communities are currently fighting the consumption of crystal meth in the state, including Enugwu Agidi, Ekwulobia, Umudioka, Oba, Obosi, and many more. In Anambra State, a total of 38,605 tablets of assorted opioids were recovered from a 229-year drug dealer with the support of men of the Nigerian police (NDLEA in Vanguard, March 13, 2022). Recently, the National Drug Law Enforcement Agency seized 1.5 million capsules of opioids in Onitsha, Anambra State (The Cable, January 16, 2022). Many communities are currently battling with the dangerous effects of methamphetamine. According to WebMD in Punch on November 24, 2021, methamphetamine causes a spike in a person's body temperature, which could make him or her pass out. The substance can also lead to anxiety, confusion, insomnia, mood swings, and violent behaviour from the user. A person addicted to methamphetamine may become paranoid and start hallucinating. He could think of hurting himself or others and may feel as though insects are crawling on his or her skin. Thus, it is very imperative to curb the rising consumption of illicit drugs, especially crystal meth in Anambra State, because it will reduce personal, family, and community harm. It will allow for better use of health and law enforcement resources, generate substantial social and economic benefits, and equally produce a healthier workforce.

In fact, if people in Anambra State use fewer illegal drugs, they will be able to get all of the benefits listed above. According to the researcher's observations, the rising consumption of illicit drugs in Anambra State does not appear to be abating. In this paper, the antidote for illicit drugs refers to programs of non-formal education that could be used to contain illicit drugs, such as public enlightenment, life skills education, and family-based drug prevention education.

Public Enlightenment

Public enlightenment is an aspect of non-formal education that involves the use of public lectures, seminars, open symposiums, displays of posters, and the involvement of electronic media in checking the menace of illicit drugs. Public education is designed to reduce the consumption of illicit drugs. Mass media such as radio, television, newspapers, internet pamphlets, handbooks, posters, and magazines are used to disseminate information to the public on the dangers of illicit drugs and to contain their rising consumption of them. Media campaigns have been used for the prevention of illicit drug use in young people. They

address specific substances with the aim of raising awareness about the associated problems. The various media campaigns target young people because drug use starts during a time in life when young people may smoke cigarettes, drink alcohol, and use other illicit drugs. Several recent media campaigns have successfully reduced the consumption of illicit drugs such as heroin and cigarettes and risky behaviors such as driving under the influence of alcohol.

Life Skills Education

Life skills are abilities for adaptive and positional behavior that enable individuals to deal effectively with the demands and challenges of everyday life. Life skills education is designed to facilitate the practice and reinforcement of psychosocial skills in a culturally and developmentally appropriate way; it contributes to the promotion of personal and social development, the projection of human rights, and the prevention of health and social problems. The purpose of life skills education is to reinforce existing knowledge, positive attitudes, and values and equally reduce myths and misinformation, negative attitudes, and risky behaviors.

The effectiveness of life skills education for reducing the consumption of illicit drugs will be enhanced if it is part of a comprehensive and ongoing health education program that has sequence and coordination over a number of years of schooling and allows for different legal, cultural, and social constraints. Life skills education must balance the provision of information with the opportunity to develop values and skills in young people to enable healthy development, cope with their problems, and resist influences to use drugs. This includes learning how to build self-esteem, set realistic goals, deal with anxiety, resist pressure, communicate well, make decisions, handle conflicts, and act confidently in social situations where drugs might be offered.

Life skills education has been adopted for American Indian populations with demonstrated effectiveness in reducing substance use (Raghupathy & Peterson, 2002; Schinke, Moncher, Palleja, Zayas, & Schilling, 1988; Schinke *et al.*, 2002). Life skills education was found to be effective in reducing smoking, alcohol, and drug use (Botvin *et al.*, in Weisen & Orley, n.d.). In fact, the Teenage Health Teaching Modules have undergone a large-scale national evaluation. Using a rigorous experimental design, 2530 subjects and 2530 controls were studied, and the results demonstrated changes in students' knowledge and attitudes related to illicit drugs. Similarly, among the senior high school students studied, there was a decline in reported use of tobacco, alcohol, and other drugs (Errecart *et al.*, in Weisen & Orley, n.d.).

Family-Based Drug Prevention Education

The prevention of illicit drugs starts inside the family unit as early as possible. There are numerous advantages to home-based drug prevention education, including increased self-awareness, improved parent-child communication skills, and family bonding. Parental supervision and involvement are critical for adolescents. Parents must not only have a plan to educate their children on the dangers of illicit drugs, but they must also establish and enforce family rules. This includes creating an effective system for monitoring their children's activities.

Family plays an important role in the lives of youth. Family bonding is the cornerstone of the relationship between

parents and children. Bonding can be strengthened through skills training regarding the supportiveness of children, the interaction of a child and parent, and parental involvement (Kosterman *et al.*, 2016). Family-based drug prevention programs focus on education and skills training to enhance positive outcomes in youth by reducing salient risk factors and building resilience (Kumpfer & Alvarado, 2003)^[4]. The goal of family-based prevention education is to promote positive growth and development by instilling proper parenting and family relational skills and reinforcing behaviors that increase parent-child attachment or love, effective monitoring, discipline, and effective communication.

Implications

1. It helps make sure that treatment is safe and effective, and it also makes it less likely that more people in a community will start using drugs.
2. It reduces the potential for relapse as patients become aware of risky people, places, and situations.
3. It helps to avoid these things or learn how to deal with some of the things that can cause a relapse.

The Way Forward

The following would help contain the rising consumption of illicit drugs

1. Non-formal education programs for the reduction of illicit drugs should be responsive and inclusive.
2. Training and teaching in drug education will enhance the impact and sustainability of illicit drug prevention programs.
3. Drug education campaigns and programs should be encouraged in every local government area.
4. School-based drug education should be encouraged.
5. Community-based drug education should be championed.

Conclusion

All organized educational activities that take place outside the formally established system are considered non-formal education. It is not a replacement for formal education. It guarantees the right of all to access education. Non-formal in this context refers to all organized activities aimed at raising awareness about illicit drugs and discouraging their use, which will invariably promote economic sustainability.

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