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Evaluating the Effectiveness of Outpatient Rehabilitation Programs for Drug Users: A Case Study from South Sulawesi

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ABSTRACT

Introduction: Drug abuse is currently a major public health issue, with drug use considered one of the primary risk behaviors leading to the development of various problems. The establishment of primary clinics within the National Narcotics Agency (BNN) at the provincial, city, and district levels aims to maximize the reach of addicts and provide rehabilitation services, particularly outpatient rehabilitation. This study aims to evaluate the effectiveness of outpatient rehabilitation programs for drug users at the South Sulawesi Provincial National Narcotics Agency.

Methods: This research employed an analytical observational design with a cross-sectional study approach. The population consisted of all outpatient rehabilitation clients at BNNP South Sulawesi, with a sample of 113 individuals selected using accidental sampling. Data were collected using questionnaires and observations. Data processing was conducted using Stata, and data analysis included univariate and bivariate analyses using the Chi-Square statistical test. The data presentation was provided in tables accompanied by narrative explanations.

Results: The study revealed that 109 respondents (96.46%) rated the effectiveness of the drug rehabilitation program as good, while 4 respondents (3.54%) rated it as less effective. The statistical tests indicated significant relationships for program understanding (p = 0.000), goal achievement (p = 0.018), and tangible changes (p = 0.018).

Conclusion: The Chi-Square test results for the variables of program understanding, goal achievement, and tangible changes yielded p-values < 0.05, leading to the rejection of H0 and acceptance of Ha. This indicates a significant relationship between these variables and the effectiveness of the drug rehabilitation program.

INTRODUCTION

Drug abuse is currently a major public health issue and is considered one of the key risk behaviors leading to further problems such as addiction, cognitive impairment, and mental health disorders (1). This condition requires serious attention, with responsibility not only limited to law enforcement but also encompassing the moral obligation of society to safeguard ethical values as a benchmark of what is appropriate, right, or wrong for the future growth cycle of individuals (2). The United Nations Office on Drugs and Crime (UNODC) reported in 2023 that 1 in every 17 people aged 15-64 worldwide had used drugs within the past 12 months in 2021. It is estimated that 36 million people used amphetamines, 22 million used cocaine, and 20 million used substances classified as "ecstasy" during that period (3).

Similar to the global situation, drug abuse and illicit drug trafficking remain prevalent in Indonesia. This is evidenced by the rising prevalence of drug abuse, increasing from 1.80% (3,419,188 individuals) in 2019 to 1.95% (3,662,646 individuals) in 2021 (4). According to the Indonesia Drug Reports 2023 published by the National Narcotics Agency (BNN), all 35 provinces in Indonesia reported drug-related crimes in the previous year. South Sulawesi ranked fifth in drug-related crime disclosures in 2022, placing it within the red zone or areas with high drug activity (5).

The government has established the National Narcotics Agency (BNN) to combat narcotics-related issues. BNN operates as a non-ministerial government agency tasked with executing governance in the prevention, eradication, and rehabilitation of drug abuse, psychotropics, precursors, and other addictive substances. One of its primary roles includes providing rehabilitation for drug addicts and/or victims of drug abuse (6).

In accordance with Law No. 35 of 2009 on Narcotics, drug addicts and victims of drug abuse are mandated to undergo medical and social rehabilitation (7). Rehabilitation services for drug addicts in South Sulawesi Province peaked in 2019, with BNNP South Sulawesi and its partners serving 1,334 clients. The lowest number of clients served was in 2020 (816 clients), followed by 2021 with 1,002 clients. Rehabilitation serves as an alternative for addressing drug abuse, often considered by judges as a substitute for criminal sentencing after careful consideration. However, some cases show that former drug users relapse or even become involved in drug trafficking after completing rehabilitation programs at BNN (8).

The effectiveness of BNN's rehabilitation program for drug addicts is crucial in addressing this issue. Effectiveness aims to evaluate how well a program addresses a given problem (9). Sutrisno identifies several indicators influencing program effectiveness: a) Program Understanding: This indicator assesses the extent to which program targets comprehend its implementation. It includes not only the clients but also the involvement of counselors who monitor the program to ensure effective execution. b) Goal Achievement: Clear and accurate program goals significantly enhance the effectiveness of activities, especially those oriented toward short-term outcomes. A program is considered effective if its predetermined objectives are achieved. c) Tangible Changes: This indicator evaluates the success of a program through observable outcomes. A program is deemed effective if it produces significant changes; conversely, it is considered ineffective if no changes occur. In this study, tangible changes refer to the extent to which the rehabilitation program restores clients without relapse (recurrence).

This study provides unique contributions in several aspects: a) This study examines the effectiveness of outpatient rehabilitation programs at the National Narcotics Agency (BNNP) of South Sulawesi Province, which has a high prevalence of drug cases. There are not many previous studies that specifically discuss the effectiveness of rehabilitation programs in this region with a comprehensive quantitative approach. b) This study uses a combination of Sutrisno's (2010) theory on program effectiveness and Lawrence Green's model related to behavioral factors that influence rehabilitation effectiveness. This approach allows for a broader analysis of factors that influence rehabilitation success, including program understanding, goal achievement, and real changes in patients. c) The results of this study provide a basis for revising the rehabilitation duration policy, highlighting the importance of integrating social and physical aspects in rehabilitation therapy. This study highlights the need for a more holistic rehabilitation program, considering social and environmental factors in preventing relapse.

METHOD

The type of research conducted in this study is quantitative research utilizing an analytical observational technique with a cross-sectional design. The study was carried out at the Adi Pradana Clinic of the National Narcotics Agency in South Sulawesi Province from December to April 2024. The population in this study consisted of all

outpatient rehabilitation clients at the Adi Pradana Clinic, totaling 154 respondents. The sampling technique employed was accidental sampling, with a sample size of 113 individuals. The sample was taken using the accidental sampling method, which may lead to representation bias. To reduce this bias, the study ensures variation in respondent characteristics (age, gender, employment status) to better reflect the population of drug users undergoing rehabilitation.

The research instrument used was a questionnaire, administered via an indirect interview method conducted by each client's addiction counselor to maintain the privacy of the rehabilitation clients. The questionnaire was tested for validity using the Pearson Product-Moment method, while reliability was tested using Cronbach's Alpha. Only questions with correlation values above 0.60 were used in the final analysis. The questionnaire consisted of three main parts: a) Demographic Characteristics consisting of Age, gender, marital status, education, and employment. b) Program Effectiveness Variables covering program understanding, achievement of rehabilitation goals, and real changes in patients. Counselors were given training before distributing the questionnaire to ensure uniformity in filling in the data. Data analysis was performed using the Stata program, employing both univariate and bivariate analysis models. The results of this study will be presented in the form of tables and narratives for interpretation and discussion of the findings.

RESULTS

The study on the Effectiveness of Outpatient Rehabilitation Programs for Drug Users at the National Narcotics Agency of South Sulawesi Province was conducted over approximately three months, from January 29 to April 5, 2024. This research is a quantitative study using a descriptive method with a cross-sectional approach. Data collection was carried out through indirect interviews conducted by counselors/rehabilitation officers with respondents using a questionnaire. This approach was taken to maintain the privacy of rehabilitation clients.

Before the counselors distributed the questionnaire to the respondents, the researchers first provided detailed explanations of important aspects of the questionnaire process, including instructions on conducting the interviews and clarifications on each question item. This ensured that respondents could ask their addiction counselors directly if they had difficulty understanding any of the questions.

Descriptive Statistics of Respondent

Based on Table 1, it is evident that the number of male respondents is higher than female respondents, with males accounting for 106 respondents (93.81%) and females only 7 respondents (6.19%). The largest age group of respondents falls within the 10–25 years range, comprising 60 respondents (53.1%), while the smallest is the >66 years age group, with only 1 respondent (0.88%).

The number of unmarried respondents is higher than those who are married, with 72 respondents (63.72%) being unmarried, while divorced respondents account for only 3 (2.64%). The majority of respondents have completed junior high school or an equivalent level of education, with 55 respondents (48.67%), whereas the lowest educational attainment is those who did not complete elementary school or have no schooling, totaling 2 respondents (1.77%). Additionally, a greater percentage of respondents are unemployed, with 31 respondents (27.43%), compared to those with jobs. The lowest proportion of respondents by occupation is civil servants, with only 1 respondent (0.88%).

Table 1. Distribution of Respondents Based on Respondent Characteristics

No	Characteristics	Frequency	%
	Gender		
1	Male	106	93.81
2	Female	7	6.19
	Age		
3	10-25 Years	60	53.1
4	26-40 Years	43	38.05
5	41-65 Years	9	7.95
6	>66 Years	1	0.88

No	Characteristics	Frequency	%
	Marital Status		
7	Single	72	63.72
8	Married	38	33.63
9	Divorced	3	2.65
	Education		
10	Did not graduate from elementary school/did not attend school	2	1.77
11	Graduated from elementary school/equivalent	27	23.89
12	Graduated from junior high school/equivalent	55	48.67
13	Graduated from high school/equivalent	23	20.35
14	Graduated from college	6	5.31
	Occupation		
15	Laborer	16	14.16
16	Honorary	2	1.77
17	College Student	5	4.33
18	Student	17	15.04
19	Farmer/Fisherman	7	6.19
20	PNS	1	0.88
21	Private Employee	2	1.77
22	Satpol PP	2	1.77
23	Driver	4	3.54
24	Self-employed	26	23.01
25	Not Working	31	27.43
	Total	**113**	**100.0**

Research Variables

Based on Table 2, it can be observed that out of a total of 113 respondents, 109 respondents (96.46%) rated the effectiveness of the rehabilitation program as good, while 4 respondents (3.53%) rated it as less good at the National Narcotics Agency of South Sulawesi Province. Regarding the understanding of the rehabilitation program, 112 respondents (99.12%) rated it as good, while only 1 respondent (0.88%) rated it as less good. For the variable of achievement of rehabilitation program goals, 109 respondents (96.46%) rated it as good, while 4 respondents (3.53%) rated it as less good. Similarly, 109 respondents (96.46%) rated the tangible outcomes of the rehabilitation program as good, while 4 respondents (3.53%) rated it as less good at the National Narcotics Agency of South Sulawesi Province.

Table 2. Distribution of Respondents Based on Research Variables

No	Research Variables	Frequency	%
	Effectiveness of Rehabilitation Program		
1	Good	109	96.46
2	Poor	4	3.53
	Program Understanding		
3	Good	112	99.12
4	Poor	1	0.88
	Goal Achievement		

5	Good	109	96.46
6	Poor	4	3.54
	Real Change		
7	Good	109	96.46
8	Poor	4	3.54
	Total	**113**	**100.0**

Program Understanding

Based on Table 3, it was found that 109 respondents (96.46%) who rated the effectiveness of the drug rehabilitation program as good also rated their understanding of the program as good. Among the 4 respondents (3.54%) who rated the program's effectiveness as less good, 3 respondents (2.68%) still rated their understanding of the program as good, while 1 respondent rated their understanding of the rehabilitation program as less good. The results of the Chi-square statistical test yielded a p-value of 0.000 (p<0.05), leading to the rejection of H0 and acceptance of Ha. This indicates a significant relationship between the effectiveness of the rehabilitation program and the understanding of the rehabilitation program at the National Narcotics Agency of South Sulawesi Province.

Table 3. The Relationship between Program Understanding and the Effectiveness of Outpatient Rehabilitation Programs for Drug Users at the National Narcotics Agency of South Sulawesi Province

No	Program Understanding	Effectiveness of Rehabilitation Program				Total		P Value
		Good		**Poor**				
		n	**%**	**n**	**%**	**n**	**%**	
1	Good	109	97.32	3	2.68	112	100.0	0.000
2	Poor	0	0.00	1	100.00	1	100.0	
3	Total	109	96.46	4	3.54	113	100.0	

Goal Achievement

Based on Table 4, among the 109 respondents (96.46%) who rated the effectiveness of the drug rehabilitation program as good, 106 respondents (97.25%) also rated the achievement of rehabilitation goals as good, while 3 respondents (75.00%) rated it as less good. Meanwhile, among the 4 respondents (3.54%) who rated the program's effectiveness as less good, 3 respondents (2.75%) still rated the achievement of rehabilitation goals as good, and 1 respondent (25.00%) rated it as less good. The results of the Chi-square statistical test yielded a p-value of 0.018 (p<0.05), leading to the rejection of H0 and acceptance of Ha. This indicates a significant relationship between the effectiveness of the rehabilitation program and the achievement of rehabilitation goals at the National Narcotics Agency of South Sulawesi Province.

Table 4. The Relationship between the Achievement of Program Objectives and the Effectiveness of the Outpatient Rehabilitation Program for Drug Users at the National Narcotics Agency of South Sulawesi Province

No	Goal Achievement	Effectiveness of Rehabilitation Program				Total		P Value
		Good		**Poor**				
		n	**%**	**n**	**%**	**n**	**%**	
1	Good	106	97.25	3	2.75	109	100.0	0.018
2	Poor	3	75.00	1	25.00	4	100.0	
3	Total	109	96.46	4	3.54	113	100.0	

Real Change

Based on Table 5, among the 109 respondents (96.46%) who rated the effectiveness of the drug rehabilitation program as good, 106 respondents (97.25%) also rated the real changes from rehabilitation as good, while 3 respondents (75.00%) rated the real changes as less good. Meanwhile, among the 4 respondents (3.54%) who rated the program's effectiveness as less good, 3 respondents (2.75%) still rated the real changes as good, and 1 respondent

(25.00%) rated the real changes as less good. The results of the Chi-square statistical test yielded a p-value of 0.018 (p<0.05), leading to the rejection of H0 and acceptance of Ha. This indicates a significant relationship between the effectiveness of the rehabilitation program and the real changes observed in the rehabilitation program at the National Narcotics Agency of South Sulawesi Province.

Table 5. The Relationship of Real Changes to the Effectiveness of Outpatient Rehabilitation Programs for Drug Users at the National Narcotics Agency of South Sulawesi Province

No	Real Change	Effectiveness of Rehabilitation Program				Total		P Value
		Good		Poor				
		n	%	n	%	n	%	
1	Good	106	97.25	3	2.75	109	100.0	0.018
2	Poor	3	75.00	1	25.00	4	100.0	
3	Total	109	96.46	4	3.54	113	100.0	

DISCUSSION

In general, the results of this study indicate that the effectiveness of the rehabilitation program for drug addicts at the National Narcotics Agency of South Sulawesi Province is good. This is indicated by the frequency of respondents' responses which are very good for several research variables. The results of testing the overall variables simultaneously against the six independent variables of program effectiveness from two theories show that there are three variables that are related to the effectiveness of the rehabilitation program for drug addicts at the National Narcotics Agency of South Sulawesi Province and there are three other variables that are not related to the effectiveness of the rehabilitation program for drug addicts at the National Narcotics Agency of South Sulawesi Province. Program effectiveness is a measure of the extent to which activities in a program are carried out to achieve the intended program objectives (10). Meanwhile, according to Terry in Ulum & Anggraini (2021), a program can be interpreted as a comprehensive plan that involves the use of various resources for the future in the form of an integrated pattern, and a series of actions taken to direct efforts to achieve the goals that have been set and the schedule for each of these actions. So that the effectiveness of the program is an assessment or measurement of the extent to which activities in the programs that have been carried out can achieve the initial objectives of the program (11).

In this study, measuring effectiveness based on Sutrisno's theory (2010) can be done by looking at the understanding of the program, achieving goals and real changes. Meanwhile, this study is supported by behavioral variables to see the relationship between behavior and the effectiveness of the rehabilitation program using the theory according to Lawrence Green influenced by several factors, namely predisposing factors, supporting factors and driving factors, in this study these factors are attitudes, environment and work (12).

The role of addiction counselors in rehabilitation programs is very important, and with the experience they have, addiction counselors will be able to understand the characteristics and ways of thinking of their clients so that it is hoped that it will be easier to guide them and bring about change. The role of addiction counselors is (a) to play a motivating role, namely motivating clients by increasing self-confidence; (b) Acting as an intermediary, helping customers in providing, among other things, the equipment they need; (c) As an educator, especially to equip clients with knowledge about their lives; (d) Counselors act as intermediaries between seekers and seeker families, etc. Meanwhile, according to the Indonesian Ministry of Social Affairs (2014), the roles and duties of addiction social workers, addiction counselors and social welfare workers in the social rehabilitation of victims of drug abuse are (a) as family counselors, (b) as consultants, (c) as case managers, (d) as mediators, namely identifying, among others: client background, obstacles, solutions; (e) as administrators, (f) as supervisors, (g) as advocates, (h) as facilitators, (i) as brokers, (j) as liaisons, and (k) as conferees (13).

This is in line with the research of Ikawati and Ani Mardiyati (2019) entitled "The Role of Addiction Counselors in the Social Rehabilitation of Victims of Drug Abuse" which shows the results that the role of addiction counselors in the success of social rehabilitation for drug victims is 43.34 percent. Based on the findings above, it is recommended to the Ministry of Social Affairs of the Republic of Indonesia through the Directorate of Social Rehabilitation for Victims of Drug Abuse to further review the policy of reducing therapy for drug abusers which

used to be 9 months including getting job skills guidance, but after the policy of reducing months, to 6 months, not all get job skills, considering that job skills guidance for drug abusers is very beneficial for drug abusers when they are post-social rehabilitation of drugs as provisions towards their independence. Aftercare also greatly supports the self-confidence and independence of drug victims quickly and effectively (14).

Program understanding, namely how the program is implemented so that it is easily accepted and understood, aims to provide knowledge and understanding to the implementing entity about how the program will be implemented, which can include the socialization process carried out by government agencies to the community that has been implemented (15).

The process of understanding the program in this study refers to Bloom's taxonomy. Bloom's taxonomy is based on the thoughts of an educational psychologist, Dr. Benjamin Boom (1956) who formed educational thinking at a higher level, namely analyzing and evaluating concepts, processes, procedures, and principles, not just memorizing facts/memorization. Bloom's taxonomy is widely applied when planning learning and teaching objectives and various learning activities. At the beginning of the preparation of his taxonomy, Bloom formulated two learning domains, namely the cognitive domain: mental skills (knowledge), and the affective domain: growth of feelings or emotional fields (attitudes). The knowledge/cognitive domain in Bloom's Taxonomy is related to memory, thinking and reasoning processes consisting of knowledge (remembering), understanding (understanding), application (applying), analysis (analyzing), synthesis (evaluating) and evaluation (creating). Knowledge is the result of knowing and appears after someone feels what they see. Object recognition occurs through the human senses: sight, smell, hearing, taste, and touch itself, and the time from recognition to the emergence of knowledge is greatly influenced by the intensity of perception or understanding of the object. Often, human knowledge comes from the ears and eyes. On the other hand, attitudes are influenced by several factors: personal experience, culture, people close to us, mass media, educational and religious institutions, and emotional factors. This is in line with research, namely research by Wahyuda et al., (2020) entitled "Analysis of the Results of the Rehabilitation Program for Drug Abuse Dependence Clients of the East Kalimantan Province BNN" which states that the results of the study through interviews show that the client's knowledge in the rehabilitation program is very good and the client is also able to remember what knowledge was obtained while undergoing the rehabilitation program, as evidenced by the client's attitude who is able to explain and accept, the client shows changes that are also felt by the family, the client can apply or practice things obtained from the rehabilitation program, the support provided by the family is always given so that it affects the client's recovery so that they do not relapse (16).

This study is also in line with research by Sahala et al., (2021) entitled "The Relationship Between Knowledge and Attitudes with Drug Abuse Prevention Actions in Adolescents in Kolongan Mitung Village, Sangihe Regency" which states that the relationship between knowledge and drug abuse prevention actions in adolescents in Kolongan Mitung Village, Sangihe Regency (p = 0.027). This study is also supported by research (Silfiana, 2022) which shows that there is a significant relationship between the level of knowledge and attitudes with the behavior of preventing nafzah in Lumaring Village, Larompong District, Luwu Regency with a sig. knowledge value (p-value 0.003 (<0.05)) and attitude (p-value 0.000 (<0.05)). Based on the results of this study, that very good knowledge will prevent an individual from doing bad things including preventing drug consumption (17).

Achievement of goals is a policy or program to achieve a desired public policy result. Therefore, the achievement of goals is the result of implementing a policy or program in the form of actions carried out by both individuals and groups and based on the objectives that have been set in the policy or program decision. In the indicator of program achievement, it is said to be effective if it achieves the predetermined goals. It can be reviewed starting from the socialization process to the evaluation in achieving the predetermined goals. This is in accordance with the general purpose of rehabilitation, namely making changes towards the better or more positive and there are efforts to motivate so that these changes can take place. The purpose of the rehabilitation program at the National Narcotics Agency of South Sulawesi Province is to restore users to be free from drugs.

To see the effectiveness of the rehabilitation provided, one of them is by seeing and knowing the quality of life of drug users. The existence of quality of life is an important thing which must be used as a reference and attention for counselors or professionals because it is a reference in seeing the success of intervention, therapy or action. Activities carried out during outpatient rehabilitation are able to improve the quality of life, subjects who previously did not function socially become more functional and begin to want to return to society. This is in accordance with the purpose of rehabilitation, namely to make drug users better in a positive direction (18).

This is in line with Asmawati's (2023) study entitled "The Effectiveness of Outpatient Rehabilitation on the Quality of Life of Drug Users" which shows that the paired T-test obtained a sig. (2-tailed) 000 value, meaning that there is a difference in the quality of life of drug users before and after undergoing outpatient rehabilitation intervention. Because it uses existing data, there are uncontrolled conditions, so rehabilitation cannot be said to be the only factor that improves quality of life. The conclusion is that outpatient rehabilitation programs can improve the quality of life of clients (19). Another study that is in line is Rahmayanti's (2023) study entitled "The Effect of Psychological Capital and Social Support on the Tendency of Drug Abusers to Relapse" which states that self-efficacy, optimism, hope, resilience, emotional support, information support, instrumental support, and friendship support show a significant effect on the tendency to relapse with a combined variance proportion of 21.4%. The self-efficacy and hope variables show a significant effect on the regression coefficient test. The results of the study indicate that self-efficacy in certain contexts can increase the tendency to relapse. Meanwhile, hope is useful in reducing the tendency to relapse. Hope can be used to improve effective recovery strategies in overcoming the tendency to relapse and helping drug abusers achieve successful recovery (20).

According to Lopez and Snyder (2004) in Supratman et al., (2020) The real change that is assessed is the condition of drug addicts when receiving rehabilitation services. Although no one can guarantee how long a drug addict can recover without using drugs (abstinence), the goal of rehabilitation services is to improve the health of drug addicts so that they can return to being productive in society. Addicts recover by recognizing their place in life based on the cultural background and values in which they live, and through their relationship with goals, expectations, established standards, and reminders. Humans are composed of dimensions of quality and sense of life, namely the dimension of physical health, the dimension of psychological well-being, the dimension of social relationships, and the dimension of environmental relationships (21).

The impact of rehabilitation felt by clients is changes in behavior, physical condition, and mindset. The behavioral changes in question are becoming more organized, independent, adaptable and clean, so that the goal of rehabilitation from a social psychological perspective is to adapt to the environment. The changes experienced by clients are in line with the rehabilitation goals set by Parto in Harjo: achieving physical and mental health.

This is in line with the research of Herdriani & Samputra (2021) entitled "The Effect of Narcotics Rehabilitation Services on the Quality of Life of Prisoners in Correctional Institutions" which states that there is a significant and positive influence between psychological health and quality of life of 0.085, social relationships with quality of life of 0.114, and there is a significant positive influence between Physical health on quality of life of 0.045. Meanwhile, the environmental relationship variable does not statistically affect quality of life. There is a significant simultaneous influence of the four variables on the quality of life of prisoners who participate in rehabilitation services at the Class II A Narcotics Prison in Jakarta (22).

Another study that is in line is the research of Malik & Syafiq (2019) entitled "Rehabilitation Experience of Drug Abusers" which states that the impact of rehabilitation felt by participants includes physical health, behavioral changes, changes in thinking, and changes. In terms of physical aspects, they feel healthier, then in terms of behavior, they feel more organized, normal, in accordance with a healthy lifestyle and like society in general. While in terms of thoughts, the changes felt are having more open, clear minds, and the emergence of awareness to stay away from drugs. In general, it can be concluded that at the beginning of entering rehabilitation, patients were still closed and rejected the program given because their self-awareness was still low, but after getting to know each other and feeling comfortable, the participants began to open up about themselves, which then encouraged their self-awareness, then because of this self-awareness, the participants began to adjust themselves so that they tried to obey the rules and follow the rehabilitation program well and as a result, participants felt positive impacts in terms of thoughts, behavior, and emotions (23).

Although the results show that the majority of clients consider the rehabilitation program effective, there are several challenges in implementing and improving the sustainability of the program: a) Several studies have shown that longer-term rehabilitation is more effective in preventing relapse. A study found that short-term outpatient rehabilitation has limited effectiveness in improving clients' long-term quality of life (27). b) A study emphasized that the success of rehabilitation is greatly influenced by psychosocial factors such as family support and post-rehabilitation planning. Therefore, a rehabilitation model that only focuses on medical aspects without social intervention is more prone to failure (28). c) Previous research showed that social stigma against former drug users is an obstacle to social reintegration. This can reduce the effectiveness of rehabilitation in the long term (29).

Strategies to improve program understanding such as: a) Providing digital education modules for patients and their families can enhance their understanding of rehabilitation, offering access to information anytime and supporting long-term recovery. The use of technology in education has been shown to increase patient engagement and reduce reliance on invalid information (30). b) Strengthening the role of counselors in delivering information systematically, such as through structured counseling sessions and text-based guides, can help patients better understand the steps of rehabilitation (31). Ongoing support post-rehabilitation such as : a) To ensure long-term success, job skills training for former drug users is essential for supporting their reintegration into society, providing practical skills, and boosting confidence (32). b) Forming community-based support groups can reduce the risk of relapse by creating an environment that supports patients in staying on track with their recovery. Research shows that strong social support from peers significantly influences maintaining long-term recovery (33).

Comparison with Previous Studies

Based on the provided article, the differences between this research and previous studies are as follows:

Focus of Research and Location: This study examines the effectiveness of the drug rehabilitation program at the National Narcotics Agency (BNN) of South Sulawesi Province, whereas several previous studies (such as those conducted by Ikawati and Ani Mardiyati, 2019, or Wahyuda et al., 2020) focused more on the role of addiction counselors or analyzing rehabilitation program outcomes in different locations, such as East Kalimantan or Sangihe (14, 16).

Dimensions Tested: This article includes six independent variables affecting the effectiveness of the rehabilitation program, including behavioral factors and measurable changes based on the theory from Sutrisno (2010), whereas previous studies focused more on behavioral factors such as knowledge, attitudes, and goal achievements as measures of rehabilitation program success (12).

Use of Theory and Approach: This study adopts a more holistic theory, integrating Sutrisno's (2010) and Lawrence Green's theories to analyze the effectiveness of the program through behavioral variables (attitudes, environment, work) and the actual changes in rehabilitation participants. In contrast, previous studies tended to focus on individual aspects such as knowledge or attitudes in assessing rehabilitation success, without deeply integrating theories related to behavioral change (24).

Approach to Measuring Program Success: This research uses a more comprehensive approach to measure the effectiveness of the rehabilitation program, not only based on goal achievements or acquired knowledge, but also by assessing behavioral changes, quality of life, and the social and physical relationships of clients. Previous studies, such as those by Rahmayanti (2023) or Asmawati (2023), emphasized the influence of psychological factors and social support on relapse or quality of life, with little emphasis on the clients' social and physical changes (25, 26).

Policy Recommendations: This study also offers specific recommendations related to rehabilitation policy, such as revisiting the duration of therapy, which were not found in previous studies. This highlights a more critical approach to existing rehabilitation policies, as well as the need to align rehabilitation practices with current conditions and their benefits for clients.

Thus, this research distinguishes itself from previous studies by taking a more comprehensive approach in analyzing various variables that affect the effectiveness of rehabilitation programs, and providing policy recommendations based on broader empirical findings.

Implications for Public Health

The implications of this study for public health are significant, as the findings highlighting the effectiveness of the drug rehabilitation program at the South Sulawesi National Narcotics Agency (BNN) provide valuable insights into how the program can be improved to enhance the quality of life for rehabilitation participants and reduce the circulation of drugs in society. With a more holistic approach to measuring the success of the program, which includes behavioral changes, quality of life, as well as social and physical aspects, this research provides a strong foundation for designing more effective rehabilitation policies based on empirical evidence. Recommendations to review the therapy duration policy and integrate social and physical aspects into the rehabilitation program can help ensure that participants not only recover psychologically but also function socially and physically in society. This also opens up opportunities for developing more inclusive and adaptive policies that align with current conditions, which, in turn, can strengthen efforts in drug abuse prevention and reduction at the community level more broadly.

Limitations and Cautions

The limitations and cautions of this study revolve around several factors. Firstly, the focus on a single location South Sulawesi may limit the generalizability of the findings, as cultural, social, and environmental factors unique to this region could influence the results. Additionally, the study primarily relies on self-reported data from participants, which may introduce potential bias or inaccuracies in reporting behavior and outcomes. The use of specific theories such as Sutrisno (2010) and Lawrence Green to frame the analysis could also constrain the interpretation of results if these theories do not fully capture all dimensions of rehabilitation or if alternative theoretical perspectives might offer different insights. Furthermore, while the study employs a comprehensive approach to measuring program effectiveness through behavioral, social, and physical outcomes, there might still be variability in how these measures are operationalized across different contexts or groups. Lastly, the time span of the study might not fully reflect long-term impacts or sustainability of the rehabilitation efforts, suggesting the need for longitudinal studies to assess long-term changes and policy implications further.

Recommendations for Future Research

Future studies could explore the impact of cultural and regional differences on the success of rehabilitation, particularly by expanding research to other provinces or countries to allow for cross-cultural comparisons. It would be beneficial to investigate the role of family and community involvement in rehabilitation outcomes, as these factors may influence the long-term success of the program. Additionally, longitudinal studies are recommended to assess the sustainability of rehabilitation programs and their long-term effects on participants' behavior, quality of life, and social reintegration. Researchers could also focus on examining the effectiveness of different therapeutic modalities within rehabilitation programs, comparing alternative approaches such as group therapy, individual counseling, or integrated mental health interventions. Finally, studies incorporating more diverse theoretical frameworks, beyond the ones used in this research, could provide a broader perspective on the mechanisms of change in rehabilitation, potentially uncovering new strategies for improving program effectiveness.

CONCLUSION

Based on the research findings regarding the effectiveness of outpatient rehabilitation programs at the National Narcotics Agency (BNNP) of South Sulawesi Province, it can be concluded that there is a significant relationship between program understanding, achievement of goals, and real changes with the effectiveness of outpatient rehabilitation programs for drug users. These findings emphasize the importance of these factors in ensuring the success of the rehabilitation process.

The recommendations from this study include the need for BNNP, particularly addiction counselors, to continuously optimize the program's objectives to ensure all clients experience meaningful changes and improved quality of life. Rehabilitation clients are encouraged to be cautious in selecting their social environments to avoid relapse. The community should actively support family members, friends, or colleagues struggling with drug use by encouraging rehabilitation. Additionally, individuals using narcotics are urged to voluntarily seek rehabilitation services at their local BNN to achieve better health outcomes.

To strengthen the practical relevance of the research implications, several solutions that can be implemented include: a) Increasing the duration of rehabilitation to a minimum of six months, in accordance with the findings of the study which showed that rehabilitation programs with longer durations have a higher success rate (34). b) Rehabilitation programs should integrate medical therapy with social therapy, such as job skills training and community support. A study confirmed that patients who received job skills guidance tended to adapt more easily after rehabilitation (35). c) The government and BNN can collaborate with the industrial sector to provide job training for rehabilitation participants to enhance social reintegration opportunities. A study shows that rehabilitation integrated with skills training increases reintegration success by up to 60% (36). Relevant case studies to support this recommendation include: a) The Rehabilitation Program at the East Kalimantan BNN showed that the combination of cognitive-behavioral therapy and community support reduced the relapse rate by 30% (32). b) The Recovery Center Program in Jakarta found that community-based rehabilitation that emphasized social reintegration succeeded in significantly improving the quality of life of patients (37).

AUTHOR'S CONTRIBUTION STATEMENT

Dian Saputra Marzuki conceptualized the study, provided critical guidance and supervision during the research process, made significant contributions to the research design and interpretation of findings, refined the research methodology, conducted the analysis, assisted in the preparation of the results and discussion. Nurul Aska Padilla conducted data collection, conducted the analysis, prepared the research results report. Amran Razak provided critical guidance and supervision during the research process, made significant contributions to the research design and interpretation of findings, refined the research methodology, assisted in the preparation of the results and discussion. Ryryn Suryaman Prana Putra. Searched for reference data sources in the background and other part of article, wrote the manuscript, reviewed the manuscript for publication. All authors read and approved the final manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

I declare that generative AI and AI-assisted technologies were used only to support language refinement and improve clarity in the writing process. All ideas, analyses, and conclusions in this thesis are entirely my own, and no AI tools were used to generate research data or substantive academic content.

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