Institute for Advanced Science,
Social and Sustainable Future

MORALITY BEFORE KNOWLEDGE

Effectiveness of rehabilitation type adjustment based on CMP analysis in improving cost efficiency and success of rehabilitation program for drug abusers

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ABSTRACT

Background: Outpatient rehabilitation for drug abusers is often inappropriate for individual conditions, which may affect the effectiveness of rehabilitation. This study aims to evaluate the difference between the results of integrated assessment recommendations and CMP analysis in determining the type of rehabilitation appropriate to the suspect's risk level. **Methods**: This study used a comparative analysis approach between the results of the integrated assessment recommendations and the CMP analysis, which integrates social and economic dimensions to assess the suitability of the type of rehabilitation based on the individual's risk level. **Findings**: The results of the analysis showed a discrepancy between the integrated assessment recommendations and the CMP analysis, where only a small proportion of suspects were recommended for outpatient rehabilitation despite having favorable social conditions. In addition, the CMP analysis showed that adjusting the type of rehabilitation to the level of risk can reduce the rehabilitation costs borne by the state. **Conclusion**: Adjusting the type of rehabilitation according to the level of risk and socio-economic condition of the individual can increase the effectiveness of rehabilitation and reduce the cost burden on the state. The integrated assessment team is advised to further consider these factors in providing matched rehabilitation recommendations. **Novelty/Originality of this article**: This study introduces the use of CMP analysis as a tool to optimize the determination of rehabilitation type, which integrates economic dimensions in designing rehabilitation financing, and makes an important contribution to improving the efficiency of drug rehabilitation programs.

KEYWORDS: CMP analysis; cost-efficiency of rehabilitation; outpatient rehabilitation; integrated assessment; risk level.

1. Introduction

Drug abuse is one of the most persistent problems in Indonesia. Based on the results of the National Survey on Drug Abuse conducted by the National Narcotics Agency (BNN) in collaboration with the University of Indonesia Health Research Center in 2017, it is known that the projected rate of drug abuse in Indonesia in the past year (current users) reached 1.77%. This means that there were 3,367,154 people who consumed drugs in the past year (current users) during 2017. Based on the survey, it was also found that drug abusers in Indonesia have an age range of 10-59 years (National Narcotics Agency, 2018: 4).

A number of studies have shown that drug abuse is detrimental to both the individual user and society (e.g. Durrant, Fisher, & Thun, 2011). Substance abuse leads to addiction,

which can contribute to increasing the risk of spiritual, psychological, social, and economic problems (Daley & Marlatt, 2006). For individual users, drugs have an impact on both physical and mental health. Narcotics can increase the risk of various diseases such as cancer, heart attack, diabetes, and other diseases. Mentally, drugs can lead to suicidal behavior, depression, anxiety, antisocial behavior, and other mental disorders (Schulte & Hser, 2013).

In criminological studies, drug abuse is studied as a crime without victim, and has a connection with other crimes (drugs related crime). As a victimless crime, drug abuse does not cause direct harm to others (Darmawan, 2007). However, this behavior is considered contrary to the moral values of society and against the criminal law (Fuller, 2011). A number of literatures found that the relationship between drugs and criminal behavior is a supplementary relationship. Drug use can increase an individual's propensity to commit crime (Mocan & Tekin, 2003). Drugs increase the risk of various crimes, such as (1) direct violence (such as aggression), (2) pickpocketing and theft to meet economic needs due to addiction, and (3) illicit drug trafficking transactions (Sarker & Faller, 2016). Other studies also show that in addition to property crime, drugs are also associated with prostitution, especially for women (Inciardi, 1985, in Hagan, 2013). The number of crimes associated with drugs is due to the high price of drugs to meet the needs of individual addicts, but not matched by adequate income levels (Hagan, 2013).

One of the treatments for drug abuse is rehabilitation. In criminology, rehabilitation is included in the study of punishment (penology). In contrast to imprisonment, rehabilitation focuses on changing behavior and reducing recidivism by improving the quality of life of offenders (Hall, 2016). Rehabilitation is designed to help individuals meet the needs associated with their offending behavior so that they can lead more productive lives (Wormith, et. al, 2007). With development programs such as education and job training, rehabilitation is expected to improve the quality of life of offenders, as well as minimize the possibility of reoffending in the future (Carrabine, et al, 2009).

One form of implementation of the mandatory rehabilitation policy in Indonesia is the integrated assessment program. This program is aimed at drug abusers and addicts who are processed in the criminal justice system. The integrated assessment program was established in 2014, based on a Joint Regulation (Perber) from 7 government agencies dealing with drug abuse issues (Supreme Court, Police, BNN, Attorney, Ministry of Law and Human Rights, Ministry of Social Affairs, and Ministry of Health). The integrated assessment program is the first step for suspected drug abusers to receive rehabilitation services instead of imprisonment. The aim of the program is to assess medically and legally whether the suspect has links to drug trafficking networks or is purely a drug abuser, and to develop an effective rehabilitation plan for the suspect. The final result of the integrated assessment is a rehabilitation recommendation letter which is used as one of the decision considerations for judges at the trial stage.

The implementation of rehabilitation in Indonesia tends to fail. Based on news reported by Beritasatu.com, around 70% of the number of drug abusers in Indonesia who have undergone rehabilitation programs from BNN tend to experience relapse. The high relapse rate of drug abusers in Indonesia indicates that the drug rehabilitation program in Indonesia is still not running effectively. This phenomenon has led to various speculations regarding what causes the effectiveness of drug rehabilitation in Indonesia to still not be realized. One of the efforts to increase the effectiveness and efficiency of rehabilitation is by adjusting the type of rehabilitation to the criteria of drug abusers. The criteria include the severity of physical, mental, and social problems due to drug abuse. McLellan, et. al (1983) found that adjusting individual criteria with the type of rehabilitation can provide better rehabilitation outcomes. In addition, matching the type of rehabilitation with individual characteristics can also encourage the cost efficiency of drug rehabilitation programs (Cartwright & Solano, 2003).

Several studies on rehabilitation show that there are a number of criteria that need to be adjusted in determining the type of inpatient and outpatient rehabilitation. Inpatient rehabilitation is given to drug abusers who are homeless, and have poor social support

(Pettinati et. al, 1993; Reif et. al, 2014; Lowenkamp and Latessa, 2005). Meanwhile, outpatient rehabilitation is intended for drug abusers who have low to medium levels of dependence, and have good social support (McCarty et. al., 2014). The provision of rehabilitation will be on target if the rehabilitation is provided in accordance with the criteria of the suspect. There are many methods of client adjustment and rehabilitation that can be used in adjusting clients to the type of rehabilitation. One of the adjustment methods that will be used in this study is the Client-treatment Matching Protocol (CMP). A number of studies have found that the CMP method is able to predict the effectiveness of rehabilitation (Melnick, et. al., 2001; DeLeon, Melnick, & Cleland., 2008; 2010).

2. Methods

This study uses secondary data from the DKI Jakarta Provincial BNNP (BNNP). The DKI Jakarta BNNP was chosen due to the affordability of the institution's location. DKI Jakarta Province was also chosen because the prevalence rate of drug abusers in this province is one of the highest in Indonesia. Secondary data in the form of rehabilitation recommendation letters issued by the DKI Jakarta BNNP integrated assessment team during 2019, totaling 67 cases. This data was obtained directly from BNNP DKI Jakarta, through a 60-day internship process. This study also uses supporting data consisting of statistical data on BNN annual reports and data on the detailed costs of implementing rehabilitation in Indonesia listed in Appendix I of the Head of BNN Regulation Number 4 of 2015 concerning procedures for improving the capacity of medical rehabilitation and social rehabilitation institutions.

Secondary data consists of several assessment variables as independent variables and the results of integrated assessment recommendations as dependent variables. Both variables will be processed quantitatively using crosstabs, followed by chi square and fisher's exact test analysis through SPSS software. The purpose of this processing is to see which assessment variables tend to be significantly related to the results of integrated assessment decisions so that they become the basis for consideration in decision making. Cross tabulation was used to see the tendency of the relationship between the two variables (independent and dependent). The analysis was continued with the chi square test to see the significance of the relationship between the independent and dependent variables in the cross tabulation.

One of the shortcomings in this study is the relatively small amount of data and the secondary nature of the data. Therefore, this study also used fisher's exact test as an alternative to the chi square test in testing the significance of the relationship between variables. Zar (1987) said that fisher's exact test can be used to test the significance of cross tabulations that are 2x2 and have a relatively small frequency. The results obtained with the fisher's exact test are approximately the same as the chi square test.

The results of the processed statistical data above were analyzed using several theoretical frameworks and related concepts. This study uses the CMP theoretical framework as the main analytical knife. In addition, there are several criminological theories used, such as social learning theory and social support theory. This theory serves as a supporting analysis in explaining the impact of adjusting the type of rehabilitation with the risk criteria of the suspect on the effectiveness and efficiency of rehabilitation. Meanwhile, the concepts used in this study consist of the concepts of drug abuse, rehabilitation, and assessment. These three concepts are used to provide boundaries in this study, where this study focuses on explaining assessment, rehabilitation, and drug abuse.

3. Results and Discussion

3.1 Application of CMP in integrated assessment recommendation results

In the CMP protocol, there are four assessment domains organized in stages, consisting of substance use level, abstinence history, social factors, and habilitation. This study slightly modified the CMP protocol by reducing the abstinence history domain. This was due to limited secondary data that did not include the abstinence variable. Thus, after the substance use level domain, the social support factors domain was continued. CMP analysis of individual criteria in the integrated assessment recommendations in detail can be seen in table 1.

Table 1. CMP analysis of individual criteria in the integrated assessment recommendations

Assessment Domain	Amount		CMP Description
	n	%	
Domain I: Level of substance use			
Low	12	17.9	Outpatient rehabilitation
High	55	82.1	Advanced domain II
Domain II: Social factors			
Good	27	49	Advanced domain III
Worse	28	51	Inpatient rehabilitation
Domain III: Habilitation			
Fixed income	15	55.6	Outpatient rehabilitation
Non-regular income/ Not yet earning	12	44.4	Inpatient rehabilitation

The assessment variable of the integrated assessment team related to domain I is the level of substance use variable. There are four categories of level of use given by the integrated assessment team, consisting of experimental, situational, regular use, and dependence. Based on their definitions, these four categories can be further grouped into two substance use groups, namely low and high use. The experimental and situational categories fall into the low-use group because of their relatively low physical and mental severity. While the other two categories, regular use and dependence, can be grouped into high levels of substance use due to their relatively high physical and mental severity. The data findings showed that the majority of suspects had a high level of substance use. About 82.1% of the total number of suspects had a level of substance use with the categories of regular use and dependence. Based on the CMP mechanism, this category is high risk and needs to continue the assessment to the next domain. Another 17.9% had a low level of substance use. This means that the level of risk is low, so the outpatient rehabilitation decision is a match and can be given to the suspect without the need to continue the assessment to the next domain.

Domain II is measured by variables of social and legal conditions, such as the suspect's family, friendships, and criminal history. If one or more social conditions are problematic, the suspect can be categorized as a high-risk individual. Meanwhile, if the social conditions are not problematic, the suspect can be categorized as a low-risk individual. The data findings showed that of the 55 suspects who had high levels of substance use, 51% of them had poor social conditions. This means that this group of suspects is at high risk so that recommendations for inpatient rehabilitation can be given directly without having to continue decision making to the next domain. While 49% of them have good social conditions so that the decision-making stage can be continued to the next domain.

Domain III concerns matters relating to an individual's work skills and education. In this domain, a suspect's risk level can only be measured based on their income status. There are three categories of income status, namely regular income, irregular income, and no

income. This criterion was chosen because the rehabilitation recommendation letter does not include data regarding the description of a person's work expertise. Based on DeLeon's (2008) study, low-risk individuals in this domain are those who have a regular income/job. Meanwhile, high-risk individuals are those who have irregular income or no income, so they need to be given vocational education to improve their work skills. The results of data analysis showed that of the 27 suspects who had a low risk in the social factors domain, 44.4% of them had irregular income or no income. So that inpatient rehabilitation decision making can be given to suspects with these criteria. Meanwhile, 55.6% of other suspects have a steady income, so they no longer need vocational education in inpatient rehabilitation to improve their work skills. Furthermore, a comparison of the results of the CMP analysis against the results of the integrated assessment recommendations can be seen in table 2.

Table 2. Comparison of CMP analysis results to integrated assessment recommendations

Type of Rehabilitation	CMP analysis results		Integrated assessment recommendations	
	N	%	n	%
Inpatient	40	59.8	62	92.5
Outpatient	27	40.2	5	7.5

In reality, the results of the CMP analysis are very different from the integrated assessment recommendations. The results of the integrated assessment recommendations showed that more suspects received recommendations for inpatient rehabilitation than outpatient rehabilitation (table 5.4.). The percentage is very large, reaching 92.5%. This number is much greater than the results of the CMP analysis which assessed that only 59.8% of suspects had high risk criteria and deserved inpatient rehabilitation. In addition, suspects who received outpatient rehabilitation in the results of the integrated assessment recommendations were also significantly different from the results of the CMP analysis. The difference between the results of the CMP analysis and the actual results of the integrated assessment recommendations shows that there are suspects who get the type of rehabilitation that does not match the criteria (mismatched). The high rate of inpatient rehabilitation also indicates a tendency for high overtreatment conditions to occur in rehabilitation recommendations from the integrated assessment team.

3.2 Implications of CMP implementation in integrated assessment recommendations for rehabilitation effectiveness

The data findings in this study show that the majority of suspects received inpatient rehabilitation. More than 90% of drug abuse suspects received recommendations for inpatient rehabilitation from the integrated assessment team. In fact, three suspects were recommended inpatient rehabilitation in correctional institutions. From these findings it can be concluded that the integrated assessment team has a tendency to choose inpatient rehabilitation as effective rehabilitation for suspects. Inpatient rehabilitation is still seen as an effective type of rehabilitation and capable of producing better outcomes than outpatient care.

Basically, inpatient and outpatient rehabilitation have relatively equivalent success rates. McCarty et. al. (2014) said that one of the things that affects the effectiveness of both types of rehabilitation is the severity of the risks that individuals have. The type of rehabilitation, both inpatient and outpatient, requires adjustments to the severity of the risks that individuals have. This is in line with the principles of effective rehabilitation according to Andrews & Bonta (2010) that there needs to be an adjustment between the type of rehabilitation and the level of risk the offender has at the assessment stage. The rehabilitation adjustment method plays an important role in bridging the assessment stage with effective rehabilitation. The application of the client adjustment method with the type

of rehabilitation is considered capable of producing a more targeted rehabilitation program so as to increase the effectiveness and efficiency of the rehabilitation program itself.

In the CMP protocol, suspects who are matched or eligible for inpatient rehabilitation are high-risk offenders. This is supported by the study of Lowenkamp and Latessa (2005) which states that inpatient rehabilitation can be effective for high-risk offenders. High-risk offenders generally have a number of serious problems in various aspects of their lives. Common problems experienced by high-risk offenders include low motivation to change, having an environment that constantly encourages them to commit offenses (criminogenic), and having a number of antisocial behaviors (Lowenkamp & Latessa, 2005). These problems are feared to have an impact on increasing the risk of recidivism in individuals if not handled intensively. Therefore, a high-intensity type of inpatient rehabilitation is needed to reduce the risk of recidivism in the future.

The results of the CMP analysis of the integrated assessment recommendations showed that 64.5% of suspects who received recommendations for inpatient rehabilitation had criteria that matched the type of rehabilitation. This means that around 40 suspects who get recommendations for inpatient rehabilitation really have a high risk so that they require inpatient rehabilitation. While the other 22 suspects are individuals who have low risk, but get recommendations for inpatient rehabilitation (mismatched). In theory, suspects who are matched with the type of inpatient rehabilitation are predicted to be able to produce better outcomes with inpatient rehabilitation than mismatched suspects.

A form of mismatch in inpatient rehabilitation is overtreatment. This condition has a negative impact on rehabilitation outcomes. One of them is increasing the risk of recidivism owned by the offender during the rehabilitation period. There are three reasons for the increased risk of recidivism in low-risk offenders who receive inpatient rehabilitation. First, the placement of low-risk offenders into inpatient rehabilitation will make it easier for them to learn the antisocial behaviors that high-risk offenders have. Second, the placement of low-risk offenders into inpatient rehabilitation will keep them away from prosocial things, such as school, friendship, work, and family. Third, close supervision in inpatient rehabilitation has the potential to increase the likelihood of offenders re-offending (Lowenkamp, Latessa, & Holsinger, 2006). This is something that the integrated assessment team should be aware of before providing this type of inpatient rehabilitation to the suspect.

One criminological theory that can explain the adverse effects of overtreatment is social learning theory. The theory proposed by Akers (1966) states that a person's probability of committing a crime can increase when they learn and interact (experience differential association) with other people who commit criminal behavior and define that behavior as favorable. Thus, when low-risk suspects are brought together in a special setting with high-risk drug abusers, there is the potential for an interaction that results in social learning. Low-risk suspects may learn criminal and other antisocial behaviours from the experiences of high-risk drug abusers in inpatient settings. This may encourage them to re-engage in the same or different offending behaviours after completing the rehabilitation program.

The high rate of overtreatment in integrated assessment results can adversely affect the effectiveness of drug rehabilitation in Indonesia. As stated by Yesberg and Polaschek (2019) in their study, the failure of rehabilitation as an alternative to punishment occurs when individuals re-offend after returning to the community. The increased risk of relapse and recidivism that occurs due to overtreatment can have implications for the failure of rehabilitation programs as an alternative to imprisonment and decriminalization measures for drug abusers. In addition, overtreatment also has a detrimental impact on the individual rights of suspects. Isolative inpatient rehabilitation indirectly restricts the individual rights of drug abusers such as education, family, obtaining information, getting a decent life, and so on. If inpatient treatment is not targeted, in addition to the failure of rehabilitation, the individual rights that are 'deliberately' restrained during rehabilitation are also wasted. Not only has the state failed to rehabilitate drug abusers, but it has also failed to ensure the fulfillment of the individual rights of each of its citizens, including drug abusers.

The results of the integrated assessment recommendations showed that only 7.5% of suspects received recommendations for outpatient rehabilitation. This is much different from the results of the CMP analysis which showed that there were 40.2% of suspects who were actually matched with outpatient rehabilitation. The significant difference between the results of the CMP and the reality of the integrated assessment recommendations indicates that the integrated assessment team does not view outpatient rehabilitation as an effective rehabilitation for drug abusers.

Matched conditions in outpatient rehabilitation occur when this type of rehabilitation is provided to low-risk individuals. This is effective because outpatient rehabilitation supports the criteria of individuals who abuse drugs with low psychiatric severity and have good social conditions, especially in the aspect of social support. Social support can come from clients' attachment to stable employment conditions, romantic relationships, friendships, and also good family relationships (Sampson and Laub, 1992, 2003, in Best, 2019). Interactions between individuals and supportive environments can increase social and emotional support during recovery. These interactions also contribute to improving substance abusers' self-image and increase their motivation to recover (Ronel & Elisha, 2011). Thus, outpatient rehabilitation programs can be effective for suspects who have good and supportive social and economic conditions.

In addition, outpatient rehabilitation also emphasizes family involvement in the individual recovery process. Research conducted by Tanner-Smith, Wilson, and Lipsey (2013) shows that family therapy programs in outpatient rehabilitation can be the strongest predictor of rehabilitation success if given to individuals with supportive family conditions. This is in line with the concept of social support proposed by Cullen (1994). One of his prepositions says that when the social support provided by the family is greater, crime can be minimized. Family-based programs such as family therapy are able to increase social support from the family, whether it is material, emotional, or instrumental. Therefore, family involvement as a supportive environment in outpatient rehabilitation can have a significant impact on the success of the rehabilitation process.

The low provision of outpatient rehabilitation in the results of integrated assessment recommendations indicates that the integrated assessment team does not have the mindset to consider the social and economic conditions of the suspect, especially the social support aspect. This finding is supported by the results of statistical processing between the variable of socio-economic assessment of suspects and the results of integrated assessment recommendations which show no tendency of a relationship between the two variables. In fact, the results of the CMP analysis show that there are still suspects with good socio-economic conditions, supportive, and worthy of outpatient rehabilitation. Unfortunately, the majority of them experienced overtreatment in inpatient rehabilitation recommendations.

Mismatched conditions in outpatient rehabilitation occur when rehabilitation is provided to high-risk individuals. This condition is also known as undertreatment. DeLeon, Melnick, and Cleland (2010) found that individuals who experience undertreatment in outpatient settings have poor rehabilitation outcomes, even worse than overtreatment conditions. This is because the level of problems that high-risk individuals have is complex and criminogenic so that it cannot be resolved only with outpatient interventions.

The adverse impact of undertreatment is an increased risk of treatment dropout in high-risk individuals. One of the disadvantages of outpatient rehabilitation is that individuals are more prone to dropout than inpatient rehabilitation (Stahler, Mennis, and DuCette, 2016). Outpatient rehabilitation has a setting that allows individuals to live freely in the community while undergoing rehabilitation. The level of supervision that outpatient rehabilitation has is also not as strict and intensive as inpatient rehabilitation. This type of rehabilitation is not suitable for high-risk suspects. This is due to the low level of motivation of high-risk individuals to change so that this condition is very supportive of dropping out of treatment in outpatient rehabilitation (Hiller, Knight, and Simpson, 1999). The occurrence of treatment dropout in high-risk suspects hinders the recovery process, even making the rehabilitation program provided fail.

In addition, high-risk suspects also tend to have poor social factors. Poor social factors can hinder the recovery process if the suspect is allowed to live in the community. Atadokht, Hajloo, and Narimani (2015) found that the poor social quality of individuals, especially social support from family and neighborhood, will reduce their ability to deal with the stress of drug dependence. Cullen (1994) said that social support that comes from poor sources and quality will only increase individual involvement in criminal behavior. This is one of the causes of relapse in high-risk drug abusers. Therefore, high-risk suspects will be more effective if given inpatient rehabilitation. The therapeutic community method used in the inpatient program is able to help individuals gain a new social environment that is of better quality than their previous environment. So far, undertreatment has not been found in the results of the integrated assessment recommendations. All high-risk suspects received recommendations for inpatient rehabilitation. Even so, this condition still needs to be watched out for, especially at the time of the judge's decision at trial. The integrated assessment team is advised to provide rehabilitation recommendations that match the risk level of the suspect. This is because matched rehabilitation has better effectiveness and better outcomes than mismatched rehabilitation.

4. Conclusions

This study shows that there is a significant discrepancy between the results of the integrated assessment recommendations and the CMP analysis regarding the implementation of outpatient rehabilitation for drug abusers. Only a small proportion of suspects received recommendations for outpatient rehabilitation, despite the CMP analysis showing that many suspects had favorable social and economic conditions for rehabilitation. CMP analysis plays an important role in creating efficient rehabilitation, by considering the economic dimension of rehabilitation financing. Adjusting the risk level to the type of rehabilitation based on the CMP can provide more cost-effective predictions than previous recommendations. In addition, rehabilitation placement and financing also need to be considered at the assessment stage.

Not all suspects should be placed in state-owned rehabilitation institutions as suggested by the integrated assessment team, as this may increase the cost burden on the state. Therefore, it is recommended that the integrated assessment team takes into account social, economic and risk level factors in determining the appropriate type of rehabilitation. Thus, adjusting the type of rehabilitation that is matched with the social and economic conditions of the suspect will increase the effectiveness of the rehabilitation program, reduce unnecessary costs, and provide more optimal rehabilitation results.

Ethical Review Board Statement
Not applicable.

Informed Consent Statement
Not applicable.

Data Availability Statement
Not applicable.

Conflicts of Interest
The authors declare no conflict of interest.

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