

The application of logotherapy to improve the meaning of life in emerging adults with self-injury

Reisha Hermana Maurits^{1*}, Muhammad Ilmi Hatta¹, and Suhana Suhana¹

Abstract

Self-injury occurs commonly in young people, especially during the development phase of emerging adults. It is seen as a manifestation of existential problems, such as obstacles in fulfilling or pursuing meaning in life which is the most basic human motivation. This study aims to determine the effect of logotherapy as an intervention to increase purpose in life in emerging adults who engage in self-injury. The research utilized a single case experiment A-B design involving two subjects, measuring their level of meaning in life with the Meaning in Life Questionnaire (MLQ). The analysis technique of visual analysis, baseline-corrected tau, and Reliable Change Index (RCI) yielded outcomes indicating logotherapy as an effective intervention option for increasing meaning in life in emerging adults with self-injury.

Keywords

Emerging adults, logotherapy, meaning in life, self-injury

Introduction

Self-injury is defined as intentional and conscious self-inflicted of one's body tissues, which is not accompanied by any suicidal intent or socially acceptable reasons, such as part of a religious or cultural ritual (American Psychiatric Association, 2013). In general, self-injury serves to manage emotional distress (such as loneliness, hopelessness, and self-hatred). It is also a means to communicate emotions to the external world and to increase self-awareness. Individuals experiencing psychological distress find relief through physical pain, which temporarily serves as a comforting ally. The physical pain becomes a method to self-soothe and numb emotional pain, creating a sense of familiarity and safety amid suffering (D'Onofrio, 2007).

According to Veague (2008), continued self-injury can lead to significant negative consequences, which have a lasting impact on an individual's mental health, with the most visible matter being the physical injury caused to oneself. Although not directly lethal, self-injury that is not properly managed may lead to infection or even accidental death for one reason or another. In addition to the physical consequences, some people who engage in self-injury tend to experience negative emotional reactions such as guilt, shame, anger, etc. (Gratz, 2003). These feelings lead to other problems, such as issues with self-esteem, interpersonal relationships, which contribute to social isolation, and other issues, not to mention society's myths and misconceptions about this behavior. These conditions increase their psychological suffering (Sutton, 2007), as progressive self-injury increases the risk of suicide attempts. Despite offering a quick way to reduce stress levels and negative emotions, it is considered a maladaptive coping mechanism due to the many adverse physical and mental health consequences (Demuthova & Demuth, 2020).

Although anyone is at risk of self-injury, ranging from all levels of society, sex, gender, age group, social class, ethnic, religious, cultural, intellectual level, and educational background (Sutton, 2007), some research suggests that there are more vulnerabilities among young people (Tidemalm et al., 2015; Townsend, 2014; Tresno et al., 2012; Whitlock et al., 2013). Lifetime prevalence of self-injury is estimated to be 8% in children, 18% in adolescents, and 12-20% in emerging adults (Kiekens et al., 2017). During the emerging adult period, particularly between the ages of 20 and 24, the frequency of self-injury often increases from the previous period (Gandhi et al., 2018). However, there is no common reason why the prevalence of self-injury is higher at this age. On the other hand, a combination of environmental, biological, cognitive, affective, and behavioral factors explains why self-injury is more common in emerging adults (Walsh, 2012). Furthermore, the developmental phase of emerging adults, which involves rapid changes in several areas of life and the exploration of choices full of ambiguity and uncertainty, can trigger considerable emotional upheaval (Kiekens et al., 2017; Kok, 2015; Marengo et al., 2019). This condition challenges their mental health and puts them at greater risk of developing maladaptive behaviors, including self-injury (Tanner & Arnett, 2011; Wood et al., 2018).

Self-injury is prevalent in emerging adults who need special attention due to the various risk factors. Despite this, many do not receive attention from clinical services, which is becoming increasingly problematic given the limited availability of interventions (McDougall et al., 2010; Townsend, 2014). Most

¹ Faculty of Psychology Universitas Islam Bandung, Bandung, Indonesia

*Corresponding author:

R.H. Maurits, Faculty of Psychology, University of Islam Bandung, Jl. Tamansari No.1, Bandung, Jawa Barat 40116 Indonesia.
Email: reisha.hermana@gmail.com

effective interventions reported are part of suicide prevention and for people with borderline personality disorder. They do not differentiate between self-injury with suicidal intent or a symptom of personality disorder and self-injury that is not (McDougall et al., 2010).

They are delivered through a direct approach that reduces or eliminates the behavior or through a holistic approach (National Collaborating Centre for Mental Health, 2012) that integrates the physical, psychological, and spiritual aspects of the condition (Shantall, 2020). It is believed that this approach addresses the complexity of the function of self-injury and provides more empathetic treatment for those who engage in it (Inckle, 2010; Long et al., 2013).

Existential-based intervention, as described by Längle (2019), takes a holistic approach that highlights the crucial role of meaning in life in promoting mental health. According to his practice, obstacles to fulfilling fundamental human motivation will lead to various psychological issues. By recognizing these barriers, individuals cultivate a sense of purpose and fulfillment that improve their overall well-being (Frankl, 2010). Steger et al. (2006) conceptualize meaning in life as consisting of two dimensions: the presence and the search for meaning in life. The fact of meaning in life is the sense that life is understandable, significant, and has a purpose or mission. At the same time, search is individuals' ongoing effort to understand the meaning and purpose of their lives.

If the will to meaning is hindered, the individual may develop existential frustration/vacuum, a condition in which a person questions the value of their life and doubts the existence or exhibits a low level of meaning in life (Glaw et al., 2017). Low levels of meaning in life generally result from a lack of purpose, personal significance, and coherence in life, resulting in individuals perceiving their lives as incoherent, without unique value, meaning, and a sense of direction or purpose, which makes them prone to experiencing feelings of meaninglessness (Kim et al., 2014). Therefore, low or no meaning in life can harm an individual's cognitive, emotional, and motivational state. It is associated with hopelessness, a perceived lack of self-control, and an absence of essential life goals (Marco et al., 2015).

Many studies show that low levels of meaning in life are associated with various mental disorders such as addictive disorders, depression, hopelessness, suicide, and self-injury (Hamza et al., 2012; Marco et al., 2015; Rodríguez et al., 2017). This study shows that individuals with low meaning in life are more likely to engage in self-injury, which predicts future self-injury frequency. A high level of meaning in life is a protective factor against self-injury and a barrier to continued self-injury behavior (Marco et al., 2015; Rodríguez et al., 2017; Whitlock et al., 2013). It is generally associated with self-realization, adaptive coping, resilience, optimism, and psychological well-being (Du et al., 2017; Kleftras & Psarra, 2012).

Meaning in life is a crucial issue for young people, including emerging adults stage of development, as they need it to understand and construct perceptions about themselves and the world around them and to organize experiences by identifying important aspects of their personal and social life. It also helps emerging adults contain cognitive schemas about their experiences, to focus on pursuing essential goals in life, and understand the world and themselves more coherently

(Krok, 2018; Steger et al., 2009). The low level of meaning in life in emerging adults contributes to the failure of identity formation, resulting in feelings of isolation and loss of purpose in life. It is an important foundation for dealing with developmental challenges and positive health outcomes in emerging adults (Henry et al., 2014).

Considering the vital role and the correlation between self-injury and meaning in life for emerging adults, the intervention based on meaning in life can potentially be an intervention for self-injury behavior. The psychological intervention based on meaning in life chosen in this study was logotherapy based on its foundation in existential perspectives, which strongly focus on existential issues, specifically those related to meaning in life. In addition, it has more operationalized therapeutic techniques and methods, making it a strong practical foundation compared to other existential-based psychotherapies that are more focused on philosophical exploration (Correia et al., 2016, 2017).

Frankl discovered logotherapy as an attempt to develop a therapeutic approach based on meaning of life. Therefore, it is defined as "healing or therapy through meaning" (Wong, 2006). Logotherapy has three fundamental assumptions describing its philosophical, anthropological, and clinical roots: meaning in life, will to meaning, and freedom of will (Marshall, 2011). Based on Frankl's theory of logotherapy, barriers to the most basic human urge, namely will to meaning, will make a person lose a strong reason to live and understand life, making them less likely to function healthily (Frankl, 2010).

Logotherapy has three main techniques: dereflection, attitude modulation, and paradoxical intention (Lukas, 2020). Deflection aims to reduce egocentrism and hyper-reflection by optimizing the human capacity for self-transcendence. Attitude modulation is designed to help clients improve their attitude toward "something" and activate the will to meaning to deal with existential frustration/vacuum. The paradoxical intention then aims explicitly to deal with phobias and obsessions, generally based on anticipatory anxiety states (Lukas, 2014).

Since logotherapy was born, it has been used as a therapeutic intervention for individuals struggling with several medical, behavioral, health, and social problems (Marshall & Marshall, 2012). Previous studies have shown the effectiveness of logotherapy in increasing meaning in life and treating people who develop self-destructive behaviors such as suicide (Hannila & Purjo, 2013), binge eating (Van der Walt, 2017), alcoholism, and drug abuse (Somov, 2007). However, to date, no research has examined its effectiveness in increasing meaning in life for people who engage in self-injury as a form of self-destructive behavior. In addition, logotherapy has also been shown to be effective in increasing meaning in life for young people with health, psychological and behavioral problems, including helping to minimize existential stress and suicide prevention interventions (Rodríguez et al., 2017; Suwanphahu et al., 2016).

Considering the things above and the effect of logotherapy on promoting and improving psychological health through meaning in life, this study seeks to analyze its effect on emerging adults with self-injury.

Method

Research Design

The A-B design model of single case experimental technique was employed, which is appropriate for a limited number of participants and studies that seek to test the impact of specific interventions (Gravetter & Forzano, 2018; Mertens, 2015).

This design involves two phases, namely the baseline and treatment phases. The baseline phase is when the dependent variable is not given. Its purpose is to provide information on the subject's condition before the intervention and to serve as a reference point for predicting the subject's disease in the absence of the intervention shortly (Tate & Perdices, 2018). This phase consists of three sessions held once a week for three weeks.

On the other hand, the treatment phase is the phase in which the dependent variable is given to the research subjects. It is divided into the diagnostic, therapy, and follow-up phase, and consists of six sessions held once or twice a week for two months, making it a total of nine sessions in this study. Incorporating a follow-up phase within the treatment phase provides additional evidence of the stability of the intervention effect compared to traditional AB designs (Gallo et al., 2013). Further information regarding logotherapy intervention procedure during the treatment phase is found in the section on logotherapy intervention.

The A-B design model requires continuous measurement in each phase with a minimum limit of three data points in each phase (Krasny-Pacini & Evans, 2018). Therefore, it was determined to be conducted with three data points in the baseline phase and four in the treatment phase. In the baseline phase, measurements were taken at sessions one, two, and three, while in the treatment phase, measures were taken at sessions four, six, eight, and nine.

Although the A-B design model is often considered the simplest model of single-case experimental designs, the authors deemed it suitable given the ongoing COVID-19 pandemic and its challenges. Specifically, the risk of sudden social restrictions, limitations on access to psychology laboratories, and the risk of transmitting the virus mandated. The selection of a design that was efficient and effective and required fewer participants and experimental sessions. The A-B design was considered to meet these needs due to its advantage in providing objective data on the effects of the intervention when time and resources are limited (Byiers et al., 2012).

Participants

Purposive sampling was utilized in this research, which involves selecting research subjects based on specific theoretical characteristics or factors that enable a detailed exploration of the phenomenon being studied (Howitt & Cramer, 2011). This method is utilized because the researcher does not obtain a precise estimate of the population with certain characteristics and is commonly used in clinical research that has specific subject characteristics (Acharya et al., 2013).

This study involved two participants who had met the predetermined criteria. The characteristics of the subject are someone who develops self-injury behavior according to the DSM-V diagnostic criteria, is in the developmental stage of

Table 1. Overview of the research participants

Initial	Age	F	Onset	Method of SI
DE	B 20	12-15	12	Hitting walls and glass Hitting and banging the head Cutting the arms and thighs
CE	24	5	17	Hitting the head Pulling the hair Scratching the arms

Note: Participant all women, Domicile from Bandung

emerging adulthood with an age range of 18-25 years, and lives in the city of Bandung. Also, it is confirmed that the research participants are not undergoing any psychological intervention program and are willing to be research subjects and follow the entire intervention process. Table 1 shows an overview of the research participants involved in this study.

Determining the subjects in this research involved a process of diagnosing self-injury behavior involving two clinical psychologists as experts. The anamnesis data and symptoms of the issues were discussed with experts to determine whether they met the DSM-V diagnostic criteria for self-injury behavior.

Research Instruments

The semi-structured interview technique is used to collect data from research subjects by allowing them to show as much information as possible about their experiences (Langdridge, 2004). It consists of open-ended questions that are designed to explore anamnesis, diagnostic criteria and frequency of self-injury behavior, as well as how the subjects underwent logotherapy intervention process.

In addition to using semi-structured interviews, this research also utilizes participant observation as a method of data collection, where the author becomes an active participant in the research subjects' environment, deliberately involves them in dialogue, and takes on an active role (Coolican, 2014).

This research uses the Meaning in Life Questionnaire (MLQ) to measure the level of meaning in life of the emerging adults with self-injury. The selection of this instrument is related to the measurement objectives following the research variables, which include meaning in life and logotherapy intervention (Ameli, 2016). MLQ is one of the main instruments used to measure meaning in life (Steger et al., 2006). It consists of 10 items using a 7-point Likert scale (1: absolutely untrue to 7: absolutely true). MLQ has two subscales that measure the presence of meaning in life (MLQ-P) and search for meaning in life (MLQ-S). The presence of meaning in life indicates whether people feel meaning in their life or consider it meaningful. Search for meaning shows a tendency to seek or deepen it actively (Damasio et al., 2016).

The process of adapting MLQ to Indonesian involves a process of testing the validity and reliability involving N=173 (male 31.21% and female 68.79%, age range 13-24, M: 18.98, SD: 3.1). Validity testing was carried out with Pearson correlation with a significance level of 5%. Calculation results show that all items are worth >0.1484 (r table). So all the items measuring the meaning in the life questionnaire (MLQ) are valid. The reliability test uses Cronbach's Alpha

Coefficient of Reliability (α). These results show that $0.70 \leq \alpha \leq 0.90$, so both MLQ ($\alpha=0.802$), MLQ-P ($\alpha=0.849$), and MLQ-S ($\alpha=0.809$) are reliable.

Logotherapy Intervention

In this study, a Logotherapy intervention was designed to increase meaning in life in emerging adults with self-injury. It was administered during the treatment phase of this study's design, which consisted of 6 sessions and was conducted over a period of 2 months. This intervention was carried out once or twice per week, with each session lasting approximately 60-90 minutes. Logotherapy intervention design refers to the general design based on Lukas (2014), which documented studies have adapted this intervention design in their research, particularly in regards to addressing conditions such as depression, (Ungar, 2002), PTSD (Shoaakazemi et al., 2012), personality disorder (Rodrigues, 2004; Rogina, 2004), internet addiction (Marshall & Marshall, 2012), alcohol and substance abuse disorders (Henrion, 2002), to name a few. Logotherapy intervention design is shown in Table 2.

Diagnostic Phase During the diagnostic phase, the therapist engages in a dialogue with the client to identify the problems and the reasons why the client has been unable to overcome them. The therapist explores symptoms, weaknesses, past disorders, traumas, current difficulties, and problems. In addition, the dialogue at this phase involves exploring the positive and healthy aspects of the client's life. This procedure is important because it prevents the client from experiencing iatrogenic neurosis/disturbance and counteracts hyper-reflection on the problems they face by demonstrating the presence of healthy and positive aspects in the client's life, even in their distressed state. This condition is addressed through a process called alternating diagnoses.

Iatrogenic neurosis/ disorder refers to a disorder/ neurosis/ psychological distress caused by the therapist. This is triggered by the actions or words of the therapist, which is interpreted by the patient as bad news, whether correctly or not, leading to an intensification of their problems. It is particularly likely to occur when the therapist gives feedback or information about the client's condition. Hyper Reflection during the diagnostic phase occurs when the therapist's efforts to understand the client's problems cause the client to become overly focused on their problems. In certain situations this leads the client to regard every challenge as a problem and abnormal, making them feel more distressed and discouraged about positive developments. This is particularly problematic because it hinders the client's progress in therapy.

The purpose of alternating diagnoses is to avoid iatrogenic and reduce hyper reflection. In this process, the therapist's focus alternates between gathering information and dereflecting the client's problems to positive life content. In addition, the therapist provides not only an answer or information about the client's problems but also on the healthy and positive aspects of their life. This allows the both of them to have a more comprehensive understanding of what they are facing and accept it with confidence.

Therapy Phase During the therapy phase, the therapist applies two specific logotherapy techniques, namely dereflection and paradoxical intention, as well as an unspecific logotherapy

technique: attitude modulation. This phase consists of four sessions.

Session 1 taking distance with symptoms. The aim of this session is to assist clients in creating distance between themselves and their symptoms or problems. They are assisted in realizing that they are unsynonymous with their fears, past experiences, obsessions, low self-esteem, insecurities, inadequacies, depressions, addictions, physical limitations or emotional outbursts. They are encouraged to recognize that they are not passive victims of their biological, psychological and social circumstances (Marshall, 2011).

During this session, the therapist uses two specific logotherapy techniques: dereflection and/or paradoxical intention, which is preceded by an explanation of their concepts and purpose. De reflection is employed to help clients break through unnecessary suffering and to counteract hyper reflection, which traps them in perceiving only their problems and nothing else. By redirecting their attention to goals beyond their difficulties and themselves, dereflection shifts the client's excessive focus away and shifts it to meaningful areas such as freedom, purpose and the positive aspects of the client's life (Ameli, 2016).

Paradoxical intention is used when the client develops anticipatory anxiety, which helps the individual deal with it by not trying to avoid or resist the anxiety, especially those caused by psychogenic factors, but by consciously expecting the feared event to occur, as it is not possible to fear what is expected to happen (Marshall, 2011).

Session II attitude modulation. The second session of the therapy phase aims to change the client's attitude. Once they are able to distance themselves from their symptoms or problems, they become open to re-evaluating their attitudes towards themselves, others and their life. The technique of attitude modulation is used to change unhealthy attitudes that contribute to maladaptive behaviors and replace them with healthier attitudes in the hope of leading the client to a more meaningful life (Lukas, 2014).

The attitude modulation technique assists individuals in recognizing that, even in situations that are irreversible and may appear meaningless, also known as inevitable suffering, there is always the potential to find meaning in how they respond and cope with such tragedies (Marshall, 2011). When the client displays an unhealthy attitude, the therapist questions them and helps them discover all of their available choices. The goal is to help the client become aware of their personally meaningful values hierarchy so that those values are actualized. The therapist does not "prescribe" attitudes or decide if it is "correct" or "moral," but rather facilitates a reflection for the client (Ameli, 2016).

Session III symptoms reduction: The successful implementation of dereflection and/or paradoxical intention and modification of attitudes techniques leads to a reduction in symptoms. They result in the complete disappearance of symptoms or an improvement in their manageability. Developing new attitudes through attitude modulation technique also helps patients accept their circumstances and discover new ways of responding to them. Healthy attitudes can strengthen patients against future challenges, facilitate faster recovery, and lead to more fulfilling lives (Lukas, 2014).

Table 2. Logotherapy treatment phase

Phase	Session	Objective	Method & Technique
Diagnostic Phase	I	Building a therapeutic relationship. Educate the process and concept of logotherapy (meaning in life, freedom of will, will to meaning). Identifying subject problems.	Discussion, consent sheet, and alternating diagnoses.
Therapy Phase	I	Taking distance with symptoms.	Education and implementation of paradoxical intention and/or dereflection.
	II	Attitude modulation.	Education and application of attitude modulation (and/or previous techniques).
	III	Symptoms reduction.	Discussion of symptom evaluation and application of logotherapy techniques (Paradoxical intention, dereflection, and/or attitude modulation).
	IV	Orientation towards meaning in life.	Application of logotherapy techniques (Paradoxical intention, dereflection, and/or attitude modulation). Identify sources of meaning in life (creative, experiential, attitudinal value). Action plan.
Follow-up Phase	I	Evaluating subject progress. Relapse prevention by preparing the subject to face stress and luxury.	Discussion.

Table 3. Summary of the Tests Result of BCT and RCI

Subject	MLQ	BCT		RCI			RCI	Significant increase
		Tau	Category	Mean score of baseline	Final score of treatment	SD of Baseline		
1	MLQ-Total	0.64	High (+)	40	49	2.6	5.5	Yes
	MLQ-P	0.71	High (+)	11	25	0.7	36.5	Yes
	MLQ-S	-0.59	Moderate (-)	29	29	2.1	-3.7	No
2	MLQ-Total	0.77	High (+)	36.6	50	2.6	8.2	Yes
	MLQ-P	0.77	High (+)	11.3	25	0.7	35.7	Yes
	MLQ-S	0.44	Moderate (+)	25.3	24	2.1	-0.2	No

Session IV orientation towards meaning in life. When reduction of symptoms is successful, patients experience the positive and healing aspects of their new attitudes. At this point, they are open to a new orientation to meaning. Therefore, the goal of this session is to help clients become more aware and realize the meaning they possess. The dialogue is directed towards identifying sources of meaning in the client's life, such as creative values, experiential values, and attitudinal values, as well as the reasons and values behind these sources of meaning. The discussion then progresses to addressing how to actualize or cultivate these values in the current life of the client (Lukas, 2014).

Follow-up Phase The goal of the follow-up phase is to evaluate the client's progress and to prevent relapse. The dialogue is directed towards determining how well the client has been able to overcome their problems, apply healthy attitudes, and actualize sources of meaning in their current life (Marshall, 2011).

In addition, relapse prevention is carried out through dialogue about how to balance stress and leisure in the client's life, as logotherapy considers them to be essential for mental health. Healthy stress is future-oriented and arises from striving towards a self that has yet to be attained, discovering meaning that has yet to be found, and towards tasks that have yet to be completed. Healthy leisure, on the other hand, stems from the past, it is a relaxation after a job well done, a resting period to gather strength before tackling the next task. Problems occur when stress lacks a future and leisure lacks a past when people work hard without knowing why, or when they live in leisure without the effort that would make it meaningful (Lukas, 2014).

Data Analysis Technique

Visual analysis is used in this study to show changes in behavior patterns between phases or sessions in the form of graphs. The indicator utilized to observe changes (increase or decrease) in the dependent variable between phases is the change in behavioral trends determined through the regression equation (Morley, 2018).

In order to answer research questions related to the effect of logotherapy interventions in increasing meaning in life in emerging adults with self-injury, Baseline Corrected Tau (BCT) statistical method was used. BCT is also employed to evaluate the effect size measurement for each session (Tarlow, 2017). The intervention is said to have an effect in changing the dependent variable, in this case, a positive change if it is in the high category ($0,60 \leq X \leq 0,80$) and very high category ($0,80 > X$) (Alresheed, 2018).

To provide an additional and more rigorous analysis of the findings, this study included the Reliable Change Index (RCI) analysis. From the calculation of RCI, it is considered that if the observed difference is equal to or greater than RCI limit of ± 1.96 , it is regarded as a statistically significant change at the 0.05 level of

significance. Positive and negative values in this score indicate an increase and decrease. Therefore, a value that moves between $+1.96$ and -1.96 is interpreted as no significant change or no change (Mata et al., 2018; Morley, 2018).

Result

Figure 1, 2, 3 shows the results of MLQ-Total, MLQ-P, and MLQ-S scores for both subjects in the baseline and treatment phases. In the baseline phase, both subjects showed a decreasing trend for MLQ-Total and MLQ-S scores, while Subject I indicated a decreasing trend for MLQ-P scores, Subject II showed a flat trend. The data points for MLQ-P and MLQ-S scores in the baseline phase provide additional information on the condition of the two subjects before receiving logotherapy intervention or entering the treatment phase. In addition, all three data points for MLQ-S scores for both subjects indicate those in the high category (>24), while MLQ-P scores indicate the ones in the low category (≤ 24).

The visual analysis in the treatment phase shows an increasing trend in MLQ-Total and MLQ-P scores for both subjects, while the trend for MLQ-S scores exhibits a decrease. Therefore, based on the visual analysis in both phases, there is a change in the trend of MLQ-Total and MLQ-P scores and no change in the trend of MLQ-S scores between the baseline and treatment phases for both subjects. Furthermore, the last data point (follow-up) in the treatment phase shows that MLQ-P scores for both subjects are in the high category (>24), while MLQ-S score for Subject I is in the low category (≤ 24) and in the high category (>24) for Subject II.

Table 3 shows the results of a BCT and RCI analysis of MLQ-Total, MLQ-P, and MLQ-S scores for two subjects. Conducting BCT analysis of MLQ-Total and MLQ-P scores, significant changes were observed in the high score category. This finding is supported by RCI analysis, which showed a significant increase in both subjects' MLQ-Total and MLQ-P scores. BCT analysis of MLQ-S score exhibited variations for the two subjects. For Subject I, BCT analysis showed a negative change in the moderate category, while for Subject II it indicated a positive change in the moderate category. However, RCI analysis of MLQ-S score for both subjects showed that there was no significant increase in this score. The conclusion drawn from the results of BCT and RCI analyses is that both subjects experienced a significant increase in meaning of life after receiving logotherapy intervention. Specifically, there was a significant increase in the presence of meaning in life (MLQ-P) dimension, whereas the search for meaning in life (MLQ-S) dimension did not experience a significant increase. Although MLQ-S dimension for Subject I showed a positive change in the moderate category, RCI calculation did not show this increase as significant.

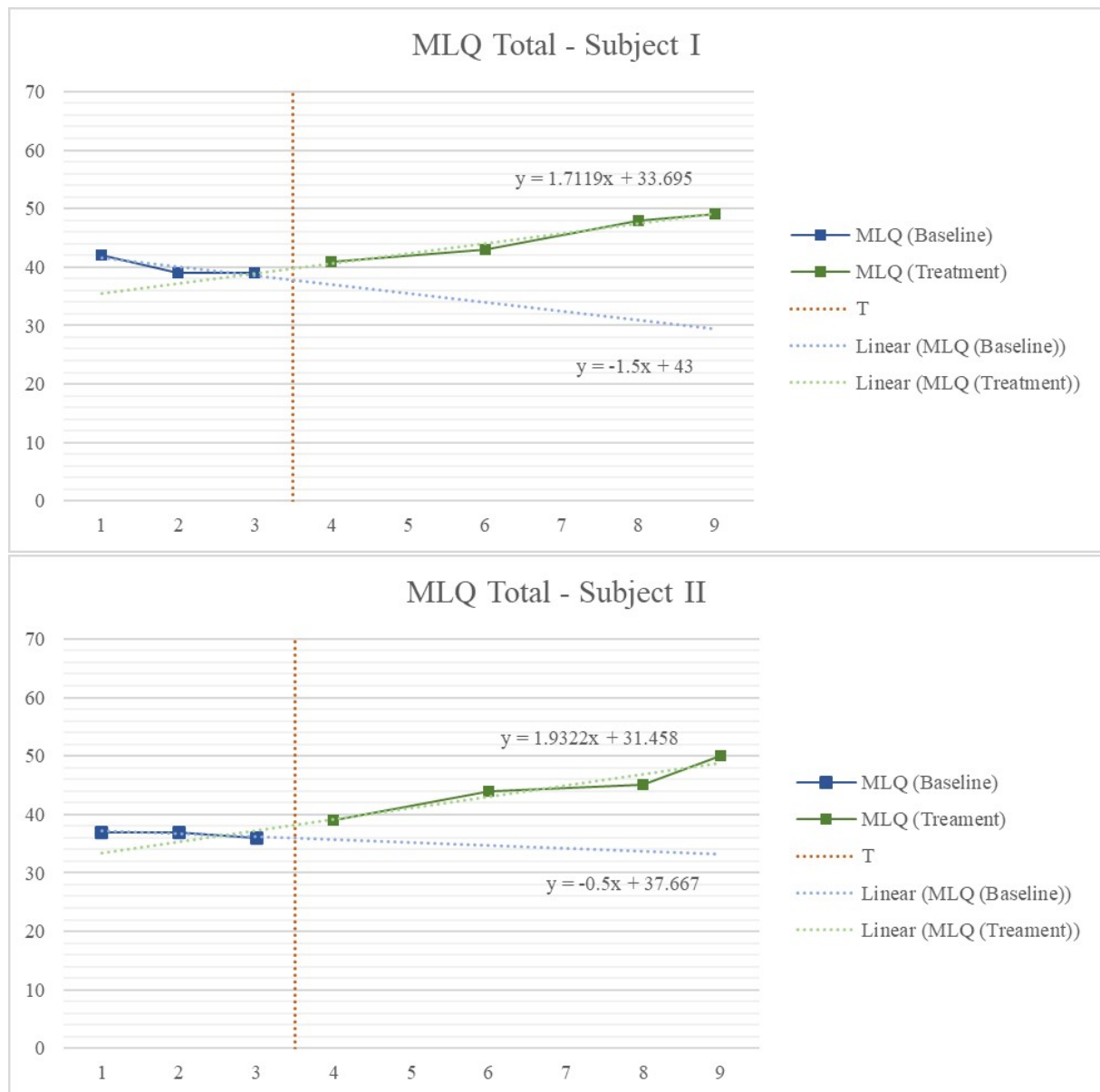


Figure 1. Trend of MLQ Total

The results of the visual, BCT, and RCI analyses consistently show that logotherapy interventions affect increasing meaning of life for emerging adults who engage in self-injury. This is visible from how logotherapy significantly increases MLQ-total and MLQ-P scores. On the other hand, logotherapy appeared to have an inconsistent effect between the two subjects and did not provide a significant increase in MLQ-S scores. Although there is no significant increase in the dimensions of the search for meaning in life, this does not mean that there is a decrease in meaning of life in general.

The results of the interviews conducted in the baseline and treatment phases provided qualitative data regarding the subjective experiences of the two subjects and the extent to which they experienced an increase in the meaning of life. Both subjects showed the existence of a

will for meaning as an aspect of the search for meaning in the life dimension. It manifested itself in the form of the will to develop oneself, to take responsibility, to care for others, and to work productively.

Both subjects also showed a state of hyper-reflection, where they focused excessively on the negative aspects of their lives, including aspects of fate and their efforts to control it. In addition, both subjects exhibited an unhealthy attitude toward themselves, a tendency toward a collective attitude in Subject I, and a fanatic attitude in Subject II. The conditions of hyper-reflection and unhealthy attitudes theoretically contribute to existential frustration because they hinder the actualization of the will to meaning. As a result, both subjects developed unnecessary suffering in the form of unhealthy feelings, thoughts, attitudes, and choices, leading both subjects to self-injury.

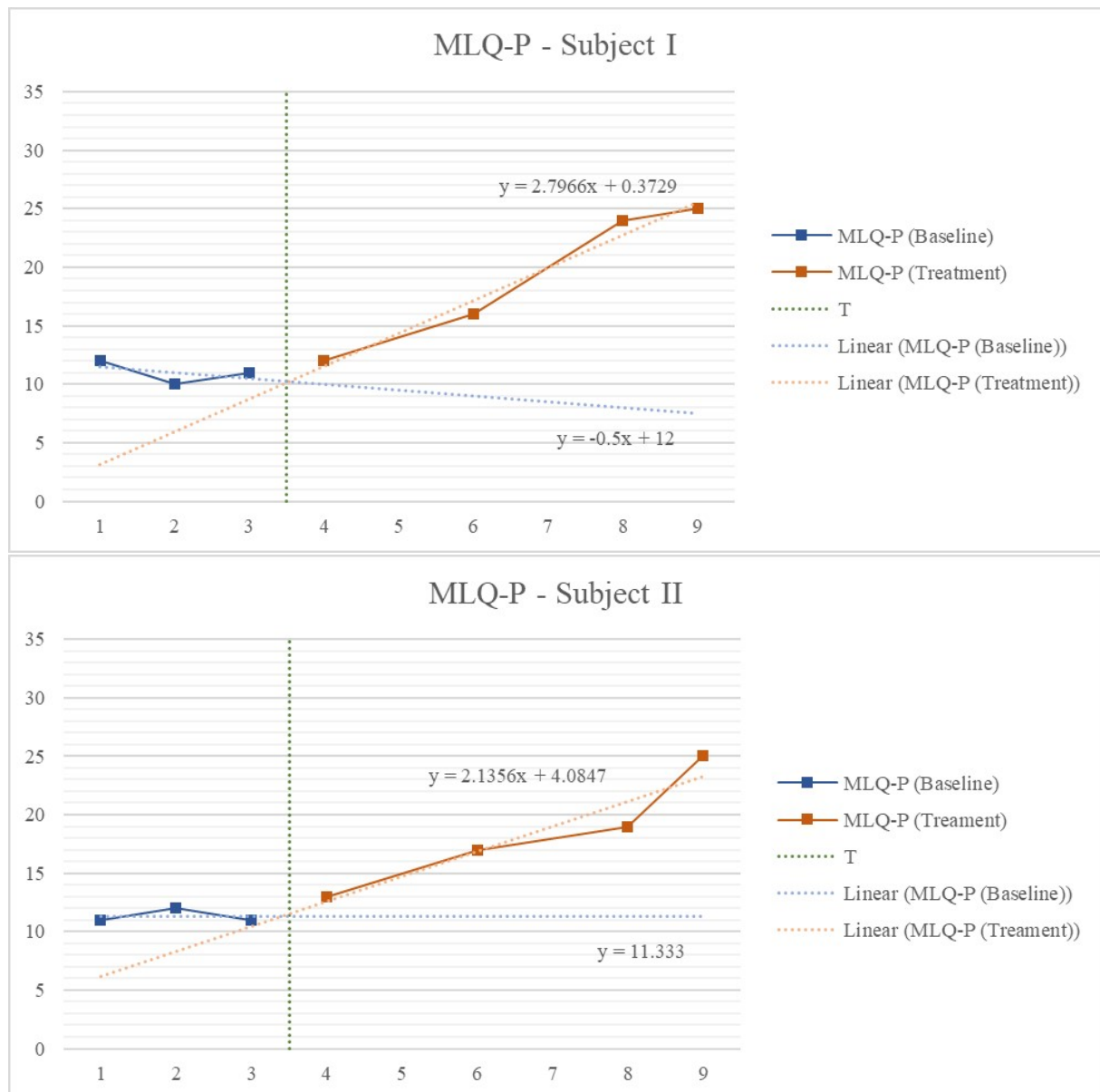


Figure 2. Trend of MLQ-P

Following logotherapy intervention, both subjects reported a greater understanding of their potential and strengths and an acceptance of their fate, indicating a reduction in hyperreflective states. In addition, they could recognize and correct their previously unhealthy attitudes. Subject I realized that she was imposing her values on others and often felt like a failure as a result, a willingness to adjust her ideal values to align with others when necessary was demonstrated. Subject II acknowledged that she did not have to agree with others and vice versa. Through this attitude, Subject II realized that the meaning of her personal productivity was overly dependent on the collective meaning of work activities. She then expanded her meaning of productivity to align with her authentic values, such as helping others and pursuing her interests. The results of the follow-up phase of logotherapy intervention indicated a significant

decrease in self-injury behavior for both subjects. Subject I showed an 86% decrease, while Subject II exhibited a complete cessation of self-injury behavior.

Discussion

The study suggest that logotherapy intervention affects increasing meaning of life in emerging adults with self-injury. This is reflected in the visual analysis, BCT, and RCI results, which consistently show a significant increase in MLQ-Total score for both subjects. In addition, the significant increase in MLQ-P score supports the efficacy of logotherapy in improving meaning in life (Steger et al., 2006). The findings support previous studies on the effectiveness of logotherapy in enhancing meaning of life, particularly in the context of

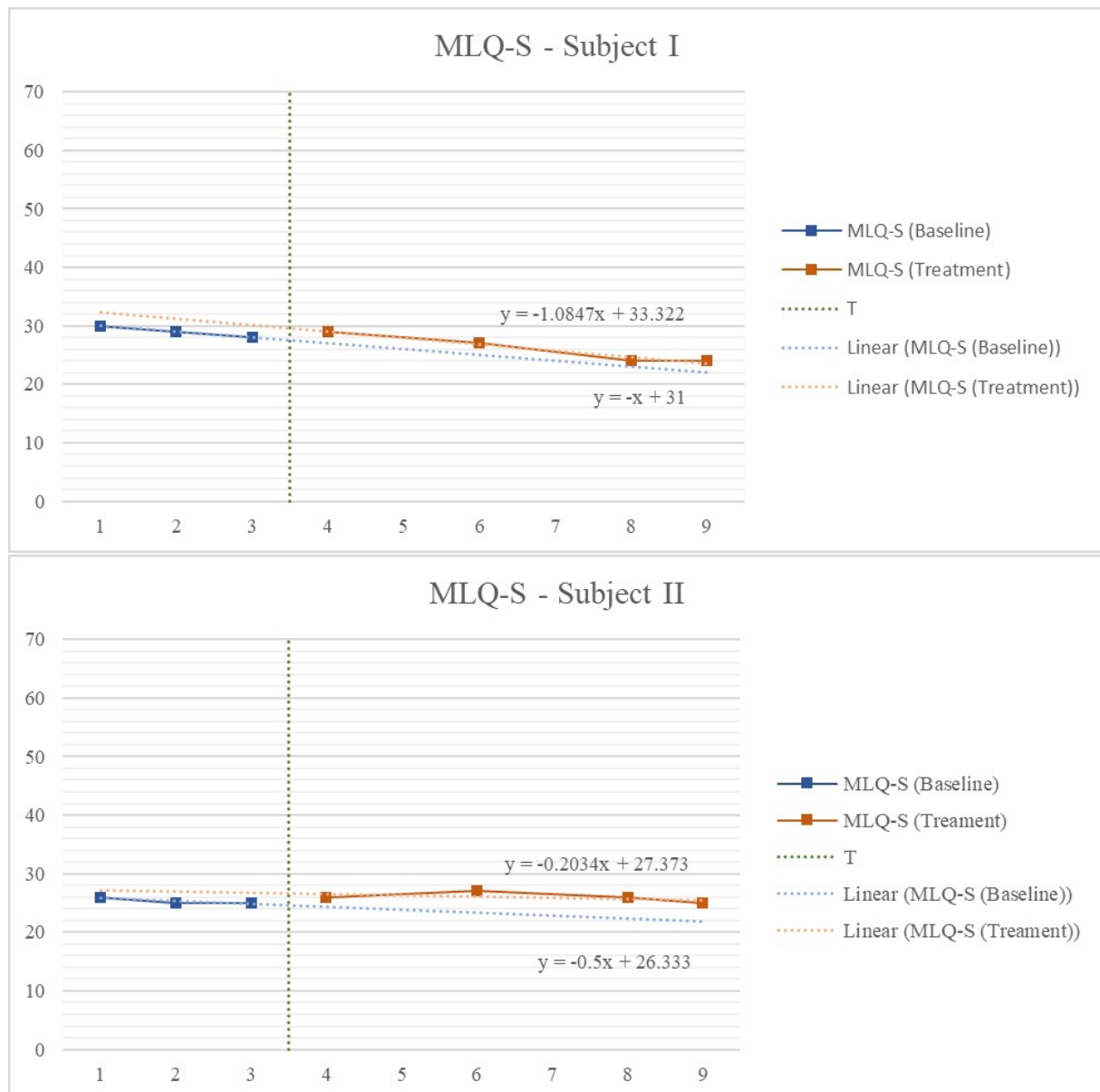


Figure 3. Trend of MLQ-S

self-destructive behavior (Hannila & Purjo, 2013; Längle & Klaassen, 2019; Somov, 2007; Van der Walt, 2017).

In the diagnostic phase, or the first session of the treatment phase, discussions were held to identify the subjects' experiences and to explore the reasons for their difficulties in coping with the problem of self-injury behavior. The study showed that both subjects experienced hyper-reflection and unhealthy attitudes that not only obscured their awareness of the presence of meaning in life but also caused them to suffer and engage in self-injury. This condition was confirmed by baseline measures that showed high MLQ-S scores and low MLQ-P scores. Park (2010) explained that people with a low presence of meaning in life are associated with an existential vacuum or struggling with existential frustration in the search for meaning in life. Although existential vacuum and/or frustration are not a mental

illness or pathology, it is a state of psychological distress that leads to poor mental health, such as self-injury behavior (Frankl, 2010). A previous study has shown that a combination of low scores on MLQ-P and high scores on MLQ-S is associated with poor mental health (Rose et al., 2016; Steger et al., 2006).

The hyper reflection found in Subject I is in the form of excessive concern about negative aspects, such as the inability and weakness in her academic life. Subject II exhibits hyper-reflection in the form of excessive concern about matters beyond her control, such as understanding others, which ultimately leads to interpersonal conflict. Hyperreflection leads to psychological distress and causes further suffering in an individual, referred to as unnecessary suffering (Lukas, 2014), it includes fear of failure, inferiority, anger and self-directed anger, frustration, guilt, etc.

Both subjects also displayed unhealthy attitudes. Subject I inclined towards using absolute and rigid values in terms of personal and organizational achievements, while Subject II tended to merge with the values of the group and impose them on others. An unhealthy attitude makes a person vulnerable to unchangeable situations and inevitable suffering. In such situations, they tend to see things as meaningless and cause additional suffering, either in the form of emotional vulnerability or loss of individuality and authentic values (Lukas, 2020; Marshall, 2011).

In addition to exploring the problems experienced by both subjects, the diagnostic phase also involves analyzing the positive and meaningful aspects related to the underlying problem of self-injury behavior that they are engaging in. The alternating diagnostic process assists individuals in recognizing that they possess positive and meaningful qualities, even when faced with problems that seem meaningless. This phase provides an opportunity for the therapist and subjects to understand the problems they are facing and also to build hope and optimism from the beginning of the session about healthy outcomes of the therapy process (Lukas, 2014).

In the next phase, the therapy phase, the discussions focus on delving into the subjects' experiences and problems related to self-injury behavior. The first session aims to help them distinguish between themselves and the problems they face by using logotherapy techniques, specifically the dereflection technique. The use of these techniques should be based on an etiological understanding of the existing problems so that the two techniques do not necessarily need to be applied if they are not in line with their goals (Costello, 2019)). Since no anticipation of anxiety was found as the etiological basis of self-injury problem, the paradoxical intention technique was not used. Meanwhile, the dereflection technique was utilized to address the hyperreflection in both subjects.

In this session, Subject I is helped not only to focus on her weaknesses and shortcomings but also encouraged to include positive and meaningful things in her academic life. Meanwhile, Subject II is encouraged not only to think about things that are beyond her control, such as the understanding of others but also to realize the free and meaningful areas in her life. This process helps them to understand the situations they face and to perceive them in a more meaningful way (Lukas, 2014). Subject I is able to regard herself holistically, both positively and negatively, and perceive her shortcomings as a motivation for growth. Meanwhile, Subject II focuses on responses that do not force others to understand her, but tries to comprehend the reasons why others do not. Dereflexion helps focus her attention outside of herself, such as on achievements, tasks, or people who are meaningful to her, so that hyperreflection is reduced (Ameli, 2016; Längle & Klaassen, 2019; Lukas, 2014). By seeing the world more holistically, both positively and negatively, they are

more open to accessing their personal resources to find more meaningful solutions to problems (Frankl, 2010).

During the second session of the therapy phase, the discussion centered on correcting the unhealthy attitudes the subjects had developed that is contributing to their problems. The Attitude Modulation technique was used to construct a healthier attitude, especially in the face of unavoidable suffering, and to strengthen the potential for healthy attitudes already within them. After using this technique, both subjects reported being able to identify the unhealthy attitudes they had developed and their effects. They were then able to choose better attitudes based on their authentic values. Subject I reported that she chose to view failure as something beyond her control and not as a tragedy, but as an opportunity to grow and make a greater contribution to her group and organization. Meanwhile, Subject II became aware that she had a choice to disagree with the opinions of others and chose to use them as an evaluation of her own personal values. The Attitude Modulation technique triggered the will to meaning, helping them to find meaning in the inevitable suffering (Ameli, 2016). Previous suffering was regarded as meaningless suffering; with better attitudes, they are transformed into meaningful actions, experiences, and attitudes, ultimately enriching their lives (Lukas, 2020).

In the third session, the discussion focuses on how the two subjects apply the dereflection technique, their new attitudes, and the values they have realized in their daily lives. Although the problems still feel unpleasant, they no longer experience intense negative thoughts and emotions. The urge to self-injury was reported to be greatly reduced or even gone. In the fourth session, the discussion focused on exploring the sources of meaning in the subjects' lives, and why they found it meaningful, including the underlying authentic values. The subjects were asked to choose some authentic values and develop an action plan to implement them. They reported being more aware of meaningful things in their lives that they had not previously thought about, and feeling more proud of themselves for having such values. This exercise helped them restore a meaningful aspect of their lives and strengthened their sense of the presence of meaning in life (Lukas, 2020).

In the follow-up phase, the therapist and the subjects discussed the progress of the previously developed action plan. They reported that implementing the action plan had been challenging because of the effort required and, in some cases, had resulted in negative experiences. However, they stated that these occasions were beneficial and an important sacrifice for their lives. Measurements taken at this stage provide further insight into the impact of logotherapy on their meaning of life, particularly in terms of the combination of scores between MLQ-P and MLQ-S (Steger, 2010). Subject I showed a prominent MLQ-P score compared to MLQ-S, indicating that Subject I has experienced a satisfying level of meaning in life but is not yet motivated to explore other sources

of meaning. Meanwhile, Subject II showed both high MLQ-P and MLQ-S scores, indicating that Subject II had experienced a satisfying level of meaning in life and are still open to exploring other sources of meaning. Previous study shows that MLQ-P is consistently associated with low levels of psychological distress and is a good indicator of psychological functioning (Temane et al., 2014). Although MLQ-S is often associated with poor mental health, the correlation between MLQ-P and healthy psychological functioning increases when someone also has a high MLQ-S score (Brassai et al., 2012; Rose et al., 2016).

Logotherapy increases the meaning of life in both subjects and involves three main aspects. First, hyperreactivity as an obstacle to the search for meaning in life is addressed with the dereflection technique (Marshall, 2011). Reducing hyperreflection enhances personal growth, self-strength and identity perception, leading to a greater sense of freedom, which promotes adaptive problem-solving in the search for meaning in life. Second, through the technique of attitude modulation, unhealthy attitudes are modified to a healthier state, thereby strengthening the potential for healthy attitudes that have already been established. With a healthier attitude, both subjects move out of the suffering caused by the loss of value in the face of unavoidable suffering and prevent the loss of value in the future (Lukas, 2020). Third, logotherapy also helps both subjects revitalize sources of meaning in life, thereby increasing their awareness of its presence in life and making their search for meaning in life more planned and directed (Lukas, 2020). Finally, logotherapy helps both subjects to focus on a meaningful life and to overcome obstacles that hinder the search for meaning in life. Unnecessary suffering is reduced, and unavoidable suffering is faced more healthily, thus reducing the frequency of self-injury.

Conclusion and Implications

This study shows that logotherapy has an effect in increasing meaning in life in emerging adults with self-injury. In this study, logotherapy significantly increased scores on MLQ-total and the presence of meaning in life but did not contribute to the search for meaning in life. Overall, logotherapy intervention enabled both subjects to become aware of and overcome factors that hindered their search for meaning in life, such as hyper reflection and unhealthy attitudes. They could recognize their authentic values and positive aspects of life as a source of strength to overcome their problems. As a result, they were more able to focus on aspects of freedom, personal growth potential, and meaning in their lives.

Some of the limitations encountered emphasized that, although the single case experiment method provides valuable information about the effect of the intervention, the generalizability of these findings remains limited. Future research needs to be conducted with a larger

sample, including a control group, to review the effect of logotherapy in emerging adults with self-injury. The follow-up phase of the logotherapy intervention was only one week apart, making the intermediate effect unknown.

Declaration

Acknowledgement

The authors appreciate the participants for their voluntary participation in this study.

Author contributions

The author(s) conducted the study involving literature studies, data collection, processing, analysis, reporting, and publication.

Conflict of interest

The authors declare there is no conflict of interest.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Orchid ID

R. H. Maurits :<https://orcid.org/0009-0003-2191-0409>

M. I. Hatta :<https://orcid.org/0000-0002-0362-7728>

S. Suhana :<https://orcid.org/0000-0002-7027-837X>

Article History

Submissions: 2022-10-10

Review Process: 2022-12-6

Revised: 2023-2-15

Accepted: 2023-04-18

Published: 2023-08-29

References

- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it? *Indian Journal of Medical Specialities*, 4(2), 330–333. <https://doi.org/10.7713/ijms.2013.0032>
- Alresheed, F. M. (2018). *Comparing single-case design non-overlap metrics and visual analysis examining school-based interventions for students with autism spectrum disorder*. University of Oregon.
- Ameli, M. (2016). Integrating logotherapy with cognitive behavior therapy: A worthy challenge. In A. Batthyány (Ed.), *Logotherapy and Existential Analysis: Proceedings of the Viktor Frankl Institute Vienna, Volume 1*. Springer International Publishing. https://doi.org/10.1007/978-3-319-29424-7_18
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM-V (5th ed.)*. American Psychiatric Publishing.

- Brassai, L., Piko, B. F., & Steger, M. F. (2012). Existential attitudes and Eastern European adolescents' problem and health behaviors: Highlighting the role of the search for meaning in life. *The Psychological Record*, 62(4), 719–734. <https://doi.org/10.1007/BF03395831>
- Byiers, B. J., Reichle, J., & Symons, F. J. (2012). Single-subject experimental design for evidence-based practice. *American Journal of Speech-Language Pathology*, 21(4), 397–414. [https://doi.org/10.1044/1058-0360\(2012/11-0036\)](https://doi.org/10.1044/1058-0360(2012/11-0036))
- Coolican, H. (2014). *Research methods and statistics in psychology* (6th ed.). Psychology Press.
- Correia, E. A., Cooper, M., Berdondini, L., & Correia, K. (2016). Existential psychotherapies: Similarities and differences among the main branches. *Journal of Humanistic Psychology*, 58(2), 119–143. <https://doi.org/10.1177/0022167816653223>
- Correia, E. A., Cooper, M., Berdondini, L., & Correia, K. (2017). Characteristic practices of existential psychotherapy: A worldwide survey of practitioners' perspectives. *The Humanistic Psychologist*, 45(3), 217. <https://doi.org/10.1037/hum0000061>
- Costello, S. J. (2019). *Applied logotherapy: Viktor Frankl's Philosophical Psychology*. Cambridge Scholars Publishing.
- D'Onofrio, A. A. (2007). *Adolescent self-injury: A comprehensive guide for counselors and health care professionals*. Springer Publishing Company.
- Damáso, B. F., Hauck-Filho, N., & Koller, S. H. (2016). Measuring meaning in life: An empirical comparison of two well-known measures. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 17(1), 431–445. <https://doi.org/10.1007/s10902-014-9602-8>
- Demuthova, S., & Demuth, A. (2020). Self-Harm in adolescence as maladaptive coping. *Broad Research in Artificial Intelligence and Neuroscience*, 11(2), 37–47. <https://doi.org/10.18662/brain/11.2Sup1/92>
- Didelot, M. J., Hollingsworth, L., & Buckenmeyer, J. A. (2012). Internet addiction: A logotherapeutic approach. *Journal of Addictions & Offender Counseling*, 33(1), 18–33. <https://doi.org/https://doi.org/10.1002/j.2161-1874.2012.00002.x>
- Du, H., Li, X., Chi, P., Zhao, J., & Zhao, G. (2017). Meaning in life, resilience, and psychological well-being among children affected by parental HIV. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*. <https://doi.org/10.1080/09540121.2017.1307923>
- Frankl, V. E., & Batthyány, A. (Ed.). (2010). *The feeling of meaninglessness: A challenge to psychotherapy and philosophy*. (D. Hallowell, Trans.). Marquette University Press.
- Gallo, K. P., Comer, J. S., & Barlow, D. H. (2013). Single-case experimental designs and small pilot trial designs. In J. S. Comer & P. C. Kendall (Eds.), *The Oxford handbook of research strategies for clinical psychology* (pp. 24–39). Oxford University Press.
- Gandhi, A., Luyckx, K., Baetens, I., Kiekens, G., Sleuwaegen, E., Berens, A., Maitra, S., & Claes, L. (2018). Age of onset of non-suicidal self-injury in Dutch-speaking adolescents and emerging adults: An event history analysis of pooled data. *Comprehensive Psychiatry*, 80, 170–178.
- Glaw, X., Kable, A., Hazelton, M., & Inder, K. (2017). Meaning in Life and Meaning of Life in Mental Health Care: An Integrative Literature Review. *Issues in Mental Health Nursing*, 38(3), 243–252. <https://doi.org/10.1080/01612840.2016.1253804>
- Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice*, 10(2), 192–205. <https://doi.org/10.1093/clipsy.bpg022>
- Gravetter, F. J., & Forzano, L.-A. B. (2018). *Research methods for the behavioral sciences* (6th ed.). Cengage Learning.
- Hamza, C. A., Stewart, S. L., & Willoughby, T. (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: A review of the literature and an integrated model. *Clinical Psychology Review*. <https://doi.org/10.1016/j.cpr.2012.05.003>
- Hannila, P., & Purjo, T. (2013). Self-destructive behavior and suicide prevention in adolescence: An existential and meaning-centered perspective. Retrieved from https://www.academia.edu/6876673/Self_Destructive_Behavior_and_Suicide_Prevention_in_Adolescence_An_Existential_and_Meaning_Centered_Perspective
- Henrion, R. (2002). Alcohol use disorders: Alcohol dependence. *International Forum for Logotherapy*, 25, 30–38.
- Henry, K. L., Lovegrove, P. J., Steger, M. F., Chen, P. Y., Cigularov, K. P., & Tomazic, R. G. (2014). The potential role of meaning in life in the relationship between bullying victimization and suicidal ideation. *Journal of Youth and Adolescence*, 43(2), 221–232. <https://doi.org/10.1007/s10964-013-9960-2>
- Howitt, D., & Cramer, D. (2011). *Introduction to research methods in psychology* (3rd ed.). Pearson Education Limited.
- Inckle, K. (2010). At the cutting edge: Creative and holistic responses to self-injury. *Creative Nursing*, 16(4), 160–165. <https://doi.org/10.1891/1078-4535.16.4.160>
- Kiekens, G., Hasking, P., Bruffaerts, R., Claes, L., Baetens, I., Boyes, M., Mortier, P., Demyttenaere, K., & Whitlock, J. (2017). What predicts ongoing nonsuicidal self-injury?: A comparison between persistent and ceased self-injury in emerging adults. *The Journal of Nervous and Mental Disease*, 205(10), 762–770.
- Kim, J., Seto, E., Davis, W. E., & Hicks, J. A. (2014). Positive and existential psychological approaches to the experience of meaning in life. In A. Batthyany & P. Russo-Netzer (Eds.), *Meaning in positive and existential psychology* (pp. 221–233). Springer Science + Business Media. https://doi.org/10.1007/978-1-4939-0308-5_13
- Kleftaras, G., & Psarra, E. (2012). Meaning in life, psychological well-being and depressive symptomatology: A comparative study. *Psychology*, 3(4), 337–345. https://doi.org/10.1007/978-1-4939-0308-5_13

- [//doi.org/10.4236/psych.2012.34048](https://doi.org/10.4236/psych.2012.34048)
- Kok, J. K. (2015). Life transition for emerging adults and their mental health. *International Journal of Social Science and Humanity*, 5(12), 1035–1039. <https://doi.org/10.7763/IJSSH.2015.V5.600>
- Krasny-Pacini, A., & Evans, J. (2018). Single-case experimental designs to assess intervention effectiveness in rehabilitation: A practical guide. *Annals of Physical and Rehabilitation Medicine*, 61(3), 164–179. <https://doi.org/https://doi.org/10.1016/j.rehab.2017.12.002>
- Krok D. (2018). When is meaning in life most beneficial to young people? Styles of meaning in life and well-being among late adolescents. *Journal of adult development*, 25(2), 96–106. <https://doi.org/10.1007/s10804-017-9280-y>
- Langdridge, D. (2004). *Introduction to research methods and data analysis in psychology*. Pearson Education Limited.
- Längle, A. (2019). Logotherapy and Existential Analysis. In E. van Deurzen (Ed.), *The Wiley World Handbook of Existential Therapy*. John Wiley & Sons.
- Längle, S., & Klaassen, D. (2019). Logotherapy and existential analysis: Method and practice. In E. van Deurzen (Ed.), *The Wiley World Handbook of Existential Therapy*. John Wiley & Sons.
- Long, M., Manktelow, R., & Tracey, A. (2013). We are all in this together: working towards a holistic understanding of self-harm. *Journal of Psychiatric and Mental Health Nursing*, 20(2), 105–113.
- Lukas, E. (2014). *Meaning in Suffering: Comfort in crisis through logotherapy* (2nd ed.). Purpose Research.
- Lukas, E. (2020). *Logotherapy: Principles and methods*. Elisabeth-Lukas-Archive.
- Marco, J. H., Garcia-Alandete, J., Pérez, S., Guillen, V., Jorquera, M., Espallargas, P., & Botella, C. (2015). Meaning in life and non-suicidal self-injury: A follow-up study with participants with borderline personality disorder. *Psychiatry Research*. <https://doi.org/10.1016/j.psychres.2015.10.004>
- Marengo, S., Klibert, J., Langhinrichsen-Rohling, J., Warren, J., & Smalley, K. (2019). The Relationship of Early Maladaptive Schemas and Anticipated Risky Behaviors in College Students. *Journal of Adult Development*, 26, 1–11. <https://doi.org/10.1007/s10804-018-9313-1>
- Marshall, M., & Marshall, E. (2012). *Logotherapy revisited: Review of the tenets of Viktor E. Frankl's logotherapy*. CreateSpace Independent Publishing Platform.
- Marshall, M. (2011). Prism of meaning: Guide to the fundamental principles of Viktor E. Frankl's logotherapy. *2nd Online Reprint*.
- Mata, L. R. F. P. da, Bernardes, M. F. V. G., Azevedo, C., Chianca, T. C. M., Pereira, M. da G., & Carvalho, E. C. de. (2018). Jacobson and truax method: evaluation of the clinical effectiveness of a home care program after prostatectomy. *Revista latino-americana de enfermagem*, 26, e3003–e3003. <https://doi.org/10.1590/1518-8345.2249.3003>
- McDougall, T., Armstrong, M., & Trainor, G. (2010). *Helping children and young people who self-harm: an introduction to self-harming and suicidal behaviours for health professionals*. Routledge.
- Mertens, D. M. (2015). *Research and evaluation in education and psychology: integrating diversity with quantitative, qualitative, and mixed methods* (4th ed.). Sage Publications.
- Morley, S. (2018). *Single-case methods in clinical psychology: A practical guide*. (C. Masterson & C. J. Main, Eds.). Routledge/Taylor & Francis Group.
- National collaborating centre for mental health. (2012). *Self-Harm: Longer-Term Management*. The British Psychological Society and The Royal College of Psychiatrists.
- Park, N., Park, M., & Peterson, C. (2010). When is the search for meaning related to life satisfaction? *Applied Psychology: Health and Well-Being*, 2(1), 1–13.
- Rodrigues, R. (2004). Borderline personality disturbances and logotherapeutic treatment approaches. *International Forum for Logotherapy*, 27, 21–27.
- Rodríguez, S. P., Salvador, J. H. M., & García-Alandete, J. (2017). The role of hopelessness and meaning in life in a clinical sample with non-suicidal self-injury and suicide attempts. *Psicothema*, 29(3), 323–328. <https://doi.org/10.7334/psicothema2016.284>
- Rogina, J. M. (2004). Treatment and interventions for narcissistic personality disorder. *International Forum for Logotherapy*, 27, 28–33.
- Rose, L. M., Zask, A., & Burton, L. J. (2016). Psychometric Properties of The Meaning in Life Questionnaire (MLQ) in a Sample of Australian Adolescents. *International Journal of Adolescence and Youth*. <https://doi.org/10.1080/02673843.2015.1124791>
- Shantall, T. (2020). Why does logotherapy work? the transformational power of meaning. in: *The life-changing impact of viktor Frankl's logotherapy*. Springer, Cham. https://doi.org/10.1007/978-3-030-30770-7_8
- Shoakazemi, M., Javid, M., Ebrahimi Tazekand, F., & Khalili, S. (2012). The effect of logo therapy on improving the quality of life in girl students with PTSD. *Life Science Journal*, 9(4), 5692–5698. [10.7537/marslsj090412.848](https://doi.org/10.7537/marslsj090412.848)
- Somov, P. G. (2007). Meaning of life group: group application of logotherapy for substance use treatment. *The Journal for Specialists in Group Work*, 32(4), 316–345. <https://doi.org/10.1080/01933920701476664>
- Steger, M. A., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: levels and correlates of meaning in life from emerging adulthood to older adulthood. *Journal of Positive Psychology*. <https://doi.org/10.1080/17439760802303127>
- Steger, M. F. (2010). *MLQ Description Scoring and Feedback Packet*. <http://www.michaelfsteger.com/wpcontent/uploads/2013/12/MLQ-description-scoring-and-feedback-packet.pdf>
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of

- and search for meaning in life. *Journal of Counseling Psychology*, 53(1), 80–93. <https://doi.org/10.1037/0022-0167.53.1.80>
- Sutton, J. (2007). *Healing the hurt within Understand self-injury and self-harm, and heal the emotional wounds* (3rd ed.). How To Books.
- Suwanphahu, B., Tuicomepee, A., & Kaemkate, W. (2016). Applying logotherapy to enhance the wellness of young delinquents with drug abuse. *Journal of Health Research*, 30(4), 275–279. <https://doi.org/10.14456/jhr.2016.3>
- Tanner, J. L., & Arnett, J. J. (2011). Presenting “emerging adulthood”: What makes it developmentally distinctive? In Jeffrey Jensen Arnett, Ph.D., Marion Kloep, Ph.D., Leo B. Hendry, Ph.D., and Jennifer L. Tanner, Ph.D. *Debating Emerging Adulthood: Stage or Process?* Oxford University Press.
- Tarlow K. R. (2017). An improved rank correlation effect size statistic for single-case designs: baseline corrected tau. *Behavior modification*, 41(4), 427–467. <https://doi.org/10.1177/0145445516676750>
- Tate, R., & Perdices, M. (2018). *Single-ase experimental designs for clinical research and neurorehabilitation settings: Planning, conduct, Analysis and Reporting* (1st ed.). Routledge. <https://doi.org/10.4324/9780429488184>
- Temane, L., Khumalo, I. P., & Wissing, M. P. (2014). Validation of the meaning in life questionnaire in a south african context. *Journal of Psychology in Africa*, 24(1), 51–60. <https://doi.org/10.1080/14330237.2014.904088>
- Tidemalm, D., Beckman, K., Dahlin, M., Vaez, M., Lichtenstein, P., Långström, N., & Runeson, B. (2015). Age-specific suicide mortality following non-fatal self-harm: a national cohort study in Sweden. *Psychological Medicine*. <https://doi.org/10.1017/S0033291714002827>
- Townsend, E. (2014). Self-harm in young People. *Evidence-Based Mental Health*. <https://doi.org/10.1136/eb-2014-101840>
- Tresno, F., Ito, Y., & Mearns, J. (2012). Self-injurious behavior and suicide attempts among indonesian college students. *Death Studies*, 36(7). <https://doi.org/10.1080/07481187.2011.604464>
- Ungar, M. (2002). A logotherapy treatment protocol for major depressive disorder. *International Forum for Logotherapy*, 25, 3–10.
- Veague, H. B. (2008). *Cutting and self-harm (psychological disorders)*. Chelsea House Publishers.
- Van der Walt, C. (2017). *Meaning in work: The development, implementation and evaluation of a logotherapy intervention in a higher education institution*. University of South Africa.
- Walsh, B. W. (2012). *Treating self-injury: A practical guide* (2nd ed.). Guilford Press.
- Whitlock, J., Muehlenkamp, J., Eckenrode, J., Purington, A., Abrams, G. B., Barreira, P., & Kress, V. (2013). Nonsuicidal self-injury as a gateway to suicide in ioung adults. *Journal of Adolescent Health*, 52(4). <https://doi.org/10.1016/j.jadohealth.2012.09.010>
- Wong, P. T. P. (2006). Existential and Humanistic Theories. In J. C. Thomas, D. L. Segal, & M. Hersen (Eds.), *Comprehensive Handbook of Personality and Psychopathology, Vol. 1. Personality and Everyday Functioning* (pp. 192–211). John Wiley & Sons, Inc..
- Wood, D., Crapnell, T., Lau, L., Bennett, A., Lotstein, D., Ferris, M., & Kuo, A. (2018). emerging adulthood as a critical stage in the life course. In N. Halfon, C. B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of Life Course Health Development* (pp. 123–143). Springer.