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Affect as a mediator in the relationship between curiosity and existential vacuum: the concept of protective resources

Afekt jako mediator relacji pomiędzy ciekawością i pustką egzystencjalną:
koncepcja zasobów ochronnych

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Abstract

Introduction and objective: This study aimed to investigate the relationship between curiosity and the sense of meaning in life, with positive and negative affect considered as mediators. Based on existing literature on curiosity and affect, the examined relationships were interpreted within the framework of protective resources. Furthermore, it was assumed that existential vacuum represents an extremely low level of the sense of meaning in life. **Materials and methods:** To test the hypotheses, the study employed Polish adaptations of the following inventories: the Curiosity and Exploration Inventory-II, the Multidimensional Existential Meaning Scale, and the Positive and Negative Affect Schedule X. The sample consisted of 481 adult individuals. The survey was conducted via an online interview, with participants recruited through a survey panel. **Results:** The results confirmed the proposed hypotheses, showing that both positive and negative affect mediate the relationship between curiosity and the sense of meaning in life. Positive affect was found to be positively associated with both variables in the model, while negative affect was inversely related to them. **Conclusions:** The findings suggest therapeutic implications for addressing existential vacuum by highlighting curiosity as a protective resource that influences this fundamental aspect of human functioning. The study may also reinforce theoretical models that attempt to embed curiosity within the network of relationships between key variables in positive psychology.

Keywords: curiosity, meaning in life, affect, protective resources

Streszczenie

Wprowadzenie i cel: Celem niniejszego badania było sprawdzenie, czy istnieje związek między ciekawością a poczuciem sensu życia przy uwzględnieniu pozytywnego i negatywnego afektu jako mediatorów tej zależności. W oparciu o istniejącą literaturę dotyczącą ciekawości i afektu analizowane zależności interpretowane są w ramach koncepcji zasobów ochronnych. Ponadto przyjęto założenie, zgodnie z podstawami teoretycznymi, że pustka egzystencjalna jest skrajnie niskim poziomem poczucia sensu życia. **Materiał i metody:** W badaniu zastosowano polskie adaptacje trzech skal: Kwestionariusza Ciekawości i Eksploracji-II, Wielowymiarowej Skali Znaczenia Egzystencjalnego oraz Skali Pozytywnego i Negatywnego Afektu X. Osoby badane to próba obejmująca 481 dorosłych osób. Badanie zostało przeprowadzone za pośrednictwem wywiadu online, a uczestnicy zostali zrekrutowani przez panel badawczy. **Wyniki:** Wyniki potwierdziły sformułowane hipotezy, wykazując, że oba aspekty afektu mediuje związek pomiędzy ciekawością i poczuciem sensu życia. Stwierdzono, że pozytywny afekt jest pozytywnie związany z obiema zmiennymi w modelu, tj. zarówno ciekawością, jak i poczuciem sensu życia, natomiast negatywny afekt jest z nimi skorelowany negatywnie. **Wnioski:** Uzyskane w badaniu dane sugerują ważne implikacje terapeutyczne w radzeniu sobie z pustką egzystencjalną, podkreślając, że ciekawość może stanowić zasób ochronny, który wpływa na tak fundamentalny aspekt funkcjonowania człowieka jak poczucie sensu życia. Wyniki mogą także stanowić uzupełnienie modeli teoretycznych skoncentrowanych na włączeniu ciekawości w sieć zależności pomiędzy kluczowymi zmiennymi w myśl psychologii pozytywnej.

Słowa kluczowe: ciekawość, sens życia, afekt, zasoby ochronne

INTRODUCTION

The study aims to describe the factors influencing existential vacuum. Although existential vacuum is not a disorder per se, it is associated with many clinical issues and disorders. For example, existential vacuum occurs in individuals with personality disorders (Liu et al., 2023). In the current search for factors contributing to existential vacuum, a particular focus is placed on curiosity and affect.

Curiosity

Curiosity is defined as a multidimensional psychological phenomenon that constitutes a fundamental element of human cognition. The core of curiosity lies in its exploratory nature (Kidd and Hayden, 2015). It is also a phenomenon that has been extensively studied (Inan, 2013; Markey and Lowenstein, 2014; Silvia, 2012). Authors emphasise the role of curiosity as a protective resource, particularly in coping with depression (Kaczmarek et al., 2014), and more broadly in supporting existing resources such as well-being (Lydon-Staley et al., 2020) and certain cognitive processes, including memory (Gruber and Ranganath, 2019). Curiosity is also considered a heterogeneous state; various types of curiosity (e.g. deprivation sensitivity) and distinct typologies of curious individuals (Kashdan et al., 2018) can be distinguished.

Affect

Affect is perceived as a basic, innate biological motivational mechanism (Tomkins, 2014). It can be described along a positive-negative dimension (Watson and Tellegen, 1985). Positive affect can significantly influence behavioural changes, serving as a proximal reward (Shiota et al., 2021). Studies also describe the positive relationship between positive affect and physical health (Cameron et al., 2015; Pressman et al., 2019). On the other hand, negative affect is presented in the literature as a factor in models explaining certain addictions (Akbari et al., 2020; Hogarth, 2020). High negative affect can impair the proper functioning of cognitive processes (Brown et al., 2018).

Sense of meaning in life

Victor Frankl introduced the concept of existential vacuum, which refers to an extreme lack of meaning in life (Frankl, 1985). Some empirical studies have adopted and expanded upon this conceptualization (Riethof and Bob, 2019). In the theory of Reker and Wong (Reker and Wong, 1988, 2012), the sense of meaning is divided into two components: global meaning (referring to the belief in the purpose and coherence of life) and situational meaning (relating to the process of assigning meaning to individual experiences). Meta-analyses point to the significant role of meaning in life

in explaining physical health (Czekierda et al., 2017). Studies also highlight the strong relationship between the sense of meaning in life and subjective psychological well-being (Li et al., 2021). Moreover, it has been found that meaning is particularly rooted in family relationships (Glaw et al., 2017) and close relationships in general (e.g. Gawda and Korniluk, 2023). Some authors, relying on the feelings-as-information theory, also argue that the sense of meaning in life provides information about the presence of reliable patterns and coherence in the environment, fulfilling a role that affect does not (Heintzelman and King, 2014).

Hypotheses

Curiosity can serve as a protective resource in coping with existential vacuum. It acts as a motivating factor that encourages engagement in new situations due to its exploratory nature (Gallagher and Lopez, 2007; Gawda and Korniluk, 2024; Litman, 2005; Spielberger and Starr, 2012). Curiosity can also foster a desire for personal development and, consequently, the need for a sense of meaning in life (Mohanty et al., 2015). Referring to the theory of Reker and Wong, curiosity appears to influence the sense of meaning in life by inducing new experiences (the exploratory component), which ultimately affect global meaning.

There are theories that describe the process of curiosity as being driven by the value of information. In this context, information is a reward in itself, with obtaining it being inherently satisfying (Marvin and Shalomy, 2016). Exploration driven by curiosity positively affects well-being (Gallagher and Lopez, 2007). Some studies suggest that attitudes toward products advertised using curiosity tend to shift in a more positive direction (Daume and Hüttel-Maack, 2020). A series of studies have observed a positive effect of affect on meaning in life (King et al., 2006). A similar effect was found in studies by Steger et al. (2008), where positive affect was associated with engagement in daily eudaimonic activities, which, in turn, were linked to a higher sense of meaning in life.

H1: Positive affect is a mediator in the relationship between curiosity and the sense of meaning (existential vacuum).

Curiosity can lead to negative states when it is unfulfilled (Jepma, 2012). Furthermore, individuals may sometimes seek aversive stimuli or be curious about negative content. Such behaviour has its benefits, including emotional informational value (Niehoff and Oosterwijk, 2020). Curiosity also extends the duration of emotional experiences, both negative and positive, with this relationship being mediated by attention (Kaneko et al., 2018).

It turns out that certain types of curiosity, such as embracing (as opposed to stretching), can predict risky behaviour among adolescents. However, neither dimension of curiosity predicted negative affect (Jovanović and Gavrilov-Jerković, 2013).

Daily positive and negative social experiences influence the sense of meaning, with negative experiences reducing

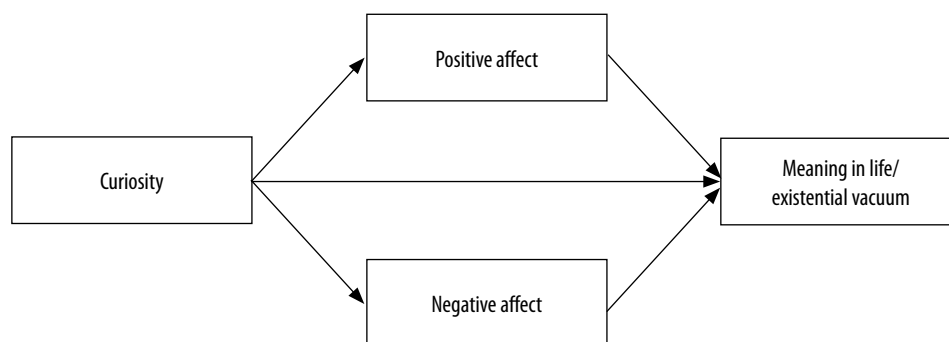


Fig. 1. Theoretical framework

well-being and, consequently, the sense of meaning in life (Machell et al., 2015). Other studies similarly suggest that negative affect may have an inverse relationship with the sense of meaning in life (Işık and Üzbe, 2015).

H2: Negative affect is a mediator in the relationship between curiosity and the sense of meaning (existential vacuum) (Fig. 1).

MATERIALS AND METHODS

Participants

The study was conducted using the answeo.pl research panel. It consisted of a series of questionnaires that participants were asked to complete. Respondents were rewarded for completing the questionnaires. The presented results represent a subset of the total collected data. The entire study took respondents an average of 15 minutes to complete. In a previous study, several variables were controlled; however, only some of them were included in the model here (Gawda and Korniluk, 2024). Due to the universal nature of the affect, the focus was solely on the affect as a universal aspect accompanying the activation of curiosity. The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Maria Curie-Skłodowska University (protocol code 17/2023).

The sample included 481 participants, of whom 234 were women, 247 were men, and three individuals did not specify their gender. Participants ranged in age from 18 to 74 years ($M = 38.97$, $SD = 11.62$). The majority of participants held a higher education degree (58.5%).

Measures

The Curiosity and Exploration Inventory II (CEI-II)

The Curiosity and Exploration Inventory II was originally developed by Kashdan et al. (2009) and adapted into Polish by Kaczmarek et al. (2014). The questionnaire consists of ten items, each rated on a 5-point Likert scale. The two subscales of curiosity were unified in this study, as the Polish version of the test showed a strong correlation between the dimensions ($r = 0.78$, $p < 0.001$). Cronbach's alpha for the combined score was $\alpha = 0.91$.

The Multidimensional Existential Meaning Scale (MEMS)

The Multidimensional Existential Meaning Scale was developed by George and Park (2017) and adapted into Polish by Gerymski and Krok (2020). The questionnaire consists of nine items (reduced in the Polish version), with responses given on a 7-point Likert scale. The three subscales were unified to create a single measure of meaning in life due to the high and significant correlations between the subscales of MEMS. In this study, Cronbach's alpha was $\alpha = 0.92$.

The Positive and Negative Affect Schedule – version X (PANAS X)

The Positive and Negative Affect Schedule was originally developed by Watson et al. (1988), later expanded to version X, and finally adapted into Polish by Fajkowska and Marszał-Wiśniewska (2009). The questionnaire measures affective valence and mood content. It consists of 60 items forming subscales, with participants rating the

Variable	Min	Max	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Curiosity CEI total	10.00	50.00	32.03	7.41	−0.51	0.488
Meaning in life	9.00	63.00	43.92	10.72	−0.653	0.303
Positive affect	10.00	50.00	33.38	6.54	−0.100	0.516
Negative affect	10.00	50.00	26.82	7.85	0.343	0.024

M – mean; *SD* – standard deviation.

Tab. 1. Descriptive statistics ($N = 481$)

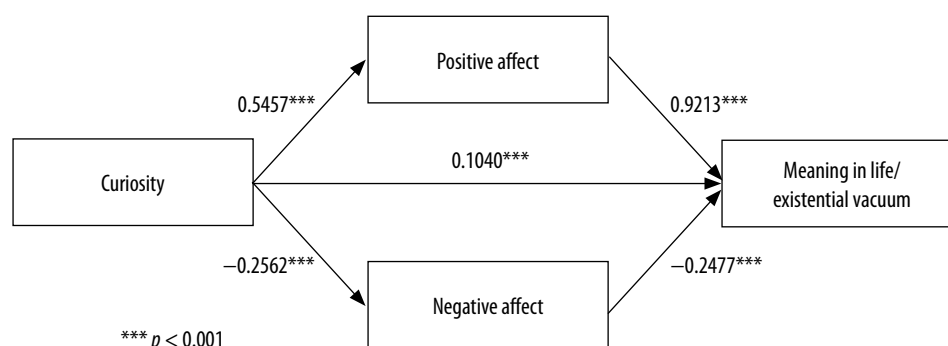


Fig. 2. Mediation analyses of curiosity and meaning in life with positive and negative affect as mediators

frequency of their emotional states on a 5-point Likert scale. For this study, the number of items was reduced to 20 (limited to two core affective subscales: positive and negative). The “usually” instruction was used, with Cronbach’s alpha for positive affect at $\alpha = 0.89$ and for negative affect at $\alpha = 0.91$.

RESULTS

Beginning the analysis process, descriptive statistics for the indicators were examined first. These are presented in Tab. 1. The values of skewness and kurtosis indicate that the distribution of data does not deviate from normal.

Two mediation analyses were conducted using the PROCESS macro 4.0 for IBM SPSS 29. The fourth model was applied, where the explanatory variable was curiosity (general CEI-II score), the dependent variable was meaning in life (general MEMS score), and the mediators were positive and negative affect (PANAS X subscales).

The mediation analysis shows that curiosity is significantly and positively associated with meaning in life and positive affect, while positive affect is significantly and positively associated with meaning in life (first path). Curiosity is also significantly and negatively associated with negative affect, while negative affect has an inverse and significant relationship with meaning in life (second path). For the first path, the indirect effect ($a1 \times b1$) was 0.503, while for the second path ($a2 \times b2$) it was 0.063. The total effect for both mediators was approximately 0.67 (Fig. 2).

DISCUSSION AND CONCLUSIONS

The first hypothesis concerning the mediating effect of positive affect is confirmed. The influence of curiosity on the sense of meaning in life occurs mainly through positive affect. A possible explanation for this phenomenon could be one of the central components of curiosity – exploratory behaviours. Positive affect can expand attentional capacities, whereas negative affect diminishes them (Melo and Anderson, 2016). This aligns with Fredrickson’s broaden-and-build theory, which suggests that positive affect broadens the range of available thoughts and behaviours, thereby building personal resources (Fredrickson,

2001). Positive emotions also promote exploration (Fitzpatrick et al., 2006), reinforcing the positive feedback loop between curiosity and the sense of meaning in life.

In the context of the present study, participants could potentially build situational meaning through a more thorough reinterpretation of everyday situations, which could ultimately influence their global meaning of life. This observation also partially confirms that curiosity is primarily a state of positive affective valence.

An alternative explanation for this phenomenon could be the well-being pathway. From this perspective, curiosity may strengthen development-oriented behaviours, which, in the long term, enhance both life satisfaction (the affective aspect) and the sense of meaning in life, as demonstrated in the studies by Kashdan and Steger (2007). Growth involves realising personal potential which can be reflected in a sense of meaning in life. This aligns with the concept of curiosity as a motivational protective resource, as proposed within the framework of self-determination theory (Ryan and Deci, 2000).

The second hypothesis is also confirmed. This result could be linked to the failure to resolve the exploratory process positively, leading to negative affective states. Some studies have shown that curiosity, in interaction with the search for meaning, can increase emotional exhaustion through the process of meaning-seeking (Garrosa et al., 2017).

This study highlights the significant role of curiosity among other variables of interest in positive psychology. Seligman (2012), in promoting the PERMA well-being model, emphasised that the factors comprising the model (e.g. positive emotions, meaning) are not sufficient on their own. Curiosity, as a unique variable, stands out due to its potential to interact with and stimulate these factors. Additional research confirms the positive effects of curiosity, among others, on engagement (Vracheva et al., 2020) and relationships (Kashdan et al., 2013). Curiosity can be a resource providing protection against existential vacuum. It can also be one of the character strengths. Curiosity is negatively correlated with depression and positively with subjective psychological well-being (Gawda and Korniluk, 2024). It serves as a motivator and plays a crucial role in healthy human development.

The findings of the present study strengthen the case for incorporating curiosity into therapeutic approaches. Previous research has already explored interventions aimed at fostering curiosity (Clark et al., 2019; Proyer et al., 2013). Furthermore, Schutte and Malouff (2023), through a meta-analysis, demonstrated that interventions designed to enhance curiosity are effective across various age groups. Given these findings, curiosity, when nurtured through therapeutic interventions, may serve as a powerful driver of well-being in patients facing challenges.

However, the study has its limitations. While the sample size is large, it is not representative, as it is based on an online panel (consisting exclusively of Polish respondents), which may lead to sampling bias. Additionally, the study is cross-sectional, so the dynamics of the mediation effect cannot be captured directly. Future research should focus on exploring the dynamic process by which curiosity influences the sense of meaning, ideally through a cross-cultural lens.

Conflict of interests

The authors declare no potential conflicts of interest with respect to the authorship and/or publication of this article.

Author contribution

Original concept of study; analysis and interpretation of data; writing of manuscript; final approval of manuscript: AK, BUG. Collection, recording and/or compilation of data; critical review of manuscript: AK.

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