

When Curiosity Feels Uncomfortable: The Association Between Curiosity as a Feeling of Deprivation and Psychological Well-Being among University Students

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Abstract. Curiosity as a feeling of deprivation (CFD) describes the urge to resolve an information gap accompanied by the discomfort of not knowing. Although CFD may involve unpleasant feelings, its relationship with broader psychological well-being (PWB) remains unclear. This study examined the association between CFD and PWB among university students in Indonesia. A quantitative cross-sectional correlational design was used with 706 students recruited through convenience sampling and an online survey. CFD was measured with an 18-item Indonesian-adapted scale based on Litman and Jimerson's (2004) CFD scale, and PWB with a 17-item Indonesian-adapted version of Ryff's scale. Both scales showed high internal consistency ($\alpha = .91$ and $.92$). Pearson's correlation showed a positive association between CFD and PWB, $r(704) = .52$, 95% CI $[.46, .57]$, $p < .001$. The association was smaller ($r = .37$) after excluding participants who gave identical responses to all items of a scale. Students who reported stronger CFD also tended to report higher PWB. The finding suggests that the discomfort of an information gap can coexist with positive psychological functioning. However, the cross-sectional, self-report, and convenience-sample design does not permit causal or generalizable conclusions.

Keywords: Curiosity as a Feeling of Deprivation; Psychological Well-being; Developmental Psychology; University Students

1 Introduction

Curiosity begins with a gap between what is known and what remains unknown. This gap can be experienced as an invitation to explore, but it can also become something that a person wants to resolve as quickly as possible. This difference matters because curiosity does not represent a single psychological experience. Research on epistemic curiosity has increasingly distinguished between curiosity driven by interest in new information and curiosity arising from the discomfort of not knowing (Litman, 2008; Yow et al., 2022).

The latter experience is captured by curiosity as a feeling of deprivation (CFD), which is also called deprivation curiosity in the literature. CFD is used consistently for this construct in the present paper. Litman and Jimerson (2004) described CFD as an individual tendency to experience an information gap as a state of deprivation that motivates the search for missing knowledge. Litman (2008) later showed that deprivation and interest are distinguishable dimensions of epistemic curiosity. Subsequent studies have strengthened this distinction. Interest curiosity and CFD can involve different benefits and drawbacks (Whitecross & Smithson, 2023a), and they differ in how people respond to uncertainty (Whitecross & Smithson, 2023b). CFD has also been associated with less adaptive information-seeking tendencies, including greater openness to inaccurate information (Zedelius et al., 2022). These findings challenge the assumption that curiosity is inherently beneficial and point to the importance of examining the particular form in which curiosity is experienced.

The experiential quality of CFD is especially relevant here. When information is missing, the motivation to search for an answer may arise not only from interest in the answer itself but also from wanting to escape the state of not knowing. Consistent with this interpretation, CFD has been associated with feelings of frustration and of being bothered while individuals anticipate receiving information (Ryakhovskaya et al., 2022). Information seeking can therefore serve two functions: exploring something interesting and reducing an uncomfortable information gap. The motivation to resolve an information gap may also keep individuals engaged with novel or challenging situations (Kaczmarek et al., 2024). CFD is thus a potentially important psychological experience to examine beyond the general tendency to be curious.

One outcome that may be relevant to this experience is psychological well-being (PWB). Ryff (1989) conceptualized PWB as positive psychological functioning across six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. From this perspective, well-being concerns how effectively individuals function and develop psychologically rather than simply how often they experience positive emotions. This distinction matters for curiosity because its consequences may depend on what motivates the search for information. Research among adolescents has found different patterns of association between types of curiosity and multidimensional well-being, with CFD not showing the same consistently beneficial pattern as joyous curiosity (Li et al., 2023). Similarly, evidence on intellectual wellness suggests that curiosity may not have uniform implications across its forms (Hamilton et al., 2024). Among college students, interest-type epistemic curiosity has also been incorporated into a model associated with PWB (Shi et al., 2025).

The available evidence therefore does not support a simple conclusion that being more curious is associated with better PWB. Instead, the type of curiosity appears to matter. This is particularly apparent in research involving students. Ibad et al. (2025) found no significant overall association between epistemic curiosity and PWB among university students, and the deprivation dimension did not emerge as a substantial contributor. Other findings point to more favorable relationships involving interest-oriented curiosity (Li et al., 2023; Shi et al., 2025). Taken together, these results suggest that treating epistemic curiosity as a broad construct may conceal differences between curiosity experienced as enjoyable interest and curiosity experienced as deprivation. A more focused examination of CFD is therefore needed.

University students offer a particularly relevant context for this question. Academic life routinely places students in situations in which information is incomplete, questions remain unanswered, and uncertainty has to be tolerated or resolved. These experiences occur alongside the developmental demands of emerging adulthood, when psychological well-being is an important aspect of adaptation and functioning. Recent work has examined PWB among university students in relation to psychological processes such as emotion regulation (Sanchez-Sanchez et al., 2025). In Indonesia, the suitability of Ryff's PWB framework for college students has also been examined through recent psychometric validation work (Nawantara et al., 2026). Thus, university students provide a meaningful population in which to examine whether a curiosity experience characterized by informational deprivation is related to broader psychological functioning.

Despite growing interest in curiosity and well-being, the relationship between CFD and PWB among university students remains insufficiently understood. Previous research has established that CFD is distinguishable from interest curiosity and may involve a more uncomfortable affective experience, while studies of curiosity and well-being suggest that the consequences differ across types of curiosity. What remains unclear is whether individual differences in CFD are associated with the multidimensional PWB described by Ryff among university students. The present study therefore examined the association between CFD and PWB. Rather than treating CFD as inherently adaptive or maladaptive, we examined whether students who tend to experience curiosity as a feeling of deprivation differ in their PWB. We hypothesized that CFD is significantly associated with PWB among university students.

2 Materials and Methods

This study used a quantitative, cross-sectional correlational design. Participants were university students in Indonesia who were recruited through convenience sampling. The inclusion criteria were being an active university student and being willing to participate. The questionnaire was administered online and distributed through WhatsApp groups, and data were collected on 24 January 2026. Participation was voluntary, and the study was conducted in accordance with ethical principles for research with human participants.

The final sample consisted of 706 university students (595 women, 84.3%; 111 men, 15.7%). Regarding the type of school attended before university, 562 participants (79.6%) came from senior high schools (SMA), 111 (15.7%) from Islamic senior high schools (MA), and 33 (4.7%) from vocational high schools (SMK). Data on age and field of study were not recorded. Because participants were not randomly drawn from a defined sampling frame, the sample cannot be assumed to be representative of university students in Indonesia.

CFD was measured with an Indonesian-adapted version of the Curiosity as a Feeling of Deprivation (CFD) scale developed by Litman and Jimerson (2004). In the original development study, a pool of 27 items was reduced to a final 15-item scale consisting of three five-item subscales (competence, intolerance, and problem-solving), which were rated on a four-point frequency scale. The version administered in the present study contained 18 items rated on a five-point scale, so it differs from the final published scale in the number of items and in the response format. The scale assesses the tendency to seek information or solve problems because of tension, discomfort, or a strong urge when facing something unknown. Item scores were summed, giving possible total scores from 18 to 90, with higher scores indicating stronger CFD. Only the total score was analyzed; subscale scores were not examined.

PWB was measured with a 17-item Indonesian-adapted version of Ryff's Psychological Well-Being Scale. The scale is grounded in Ryff's (1989) multidimensional model of PWB (see also Ryff & Keyes, 1995), which comprises self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Ryff's scales exist in several lengths, and the allocation of the 17 items to the six dimensions was not available for the present

study. Only the total score was therefore analyzed. Items were rated on a five-point scale and summed, giving possible total scores from 17 to 85, with higher scores indicating higher PWB.

Content validity of the Indonesian-adapted instruments was evaluated before data collection by one expert in psychological measurement (sport psychology), who judged the instruments to be valid. This was a single-expert judgment, and no quantitative content validity index was computed. No additional validity analyses, such as factor analysis, were conducted in the present study, so evidence of construct validity in this sample is limited. Internal consistency in the present sample was estimated for both scales using Cronbach's alpha and McDonald's omega, and the results are reported in the Results section.

Data were analyzed using JASP. Descriptive statistics (mean, standard deviation, minimum, and maximum) and the skewness and kurtosis of the total scores were computed for each variable. Pearson's correlation was used to test the association between CFD and PWB, with a 95% confidence interval and a significance level of $\alpha = .05$ (two-tailed). As a supplementary check of the sensitivity of the result to departures from normality, Spearman's rank-order correlation was also computed. Because identical responses to all items of a scale (uniform responding) can inflate correlations between self-report scales, a second sensitivity analysis repeated the correlation after excluding participants who gave identical responses to all items of either scale.

3 Results

Table 1. Descriptive Statistics and Reliability Coefficients (N = 706)

Variable	Items	Possible range	Observed range	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	α	ω
CFD	18	18–90	18–90	71.79	10.07	−0.31	0.87	.91	.92
PWB	17	17–85	17–85	69.88	9.46	−0.78	1.91	.92	.92

Note. N = 706 for both variables; there were no missing data. α = Cronbach's alpha; ω = McDonald's omega. CFD = curiosity as a feeling of deprivation; PWB = psychological well-being.

Table 1 presents the descriptive statistics and reliability coefficients for CFD and PWB among the 706 participants. There were no missing data. The mean CFD score was 71.79 ($SD = 10.07$; possible range 18–90), and the mean PWB score was 69.88 ($SD = 9.46$; possible range 17–85). For both scales, the observed scores covered the entire possible range. Both distributions were slightly negatively skewed (skewness = −0.31 for CFD and −0.78 for PWB), with kurtosis values of 0.87 and 1.91, respectively. Internal consistency was high for both scales (CFD: $\alpha = .91$, $\omega = .92$; PWB: $\alpha = .92$, $\omega = .92$). These values indicate that the items of each scale were consistent in this sample, but they do not by themselves establish the validity of the scales.

Table 2. Correlation between CFD and PWB

Sample	<i>r</i>	95% CI	<i>p</i>	Spearman's ρ
Full sample (N = 706)	.52	[.46, .57]	< .001	.48
Excluding uniform responders (n = 611)	.37	[.30, .44]	< .001	.37

Note. $df = 704$ for the full sample and 609 for the reduced sample. r = Pearson's correlation coefficient; CI = confidence interval for r . All p -values for Spearman's ρ were $< .001$. Uniform responders were participants who gave identical responses to all items of the CFD scale, the PWB scale, or both.

Pearson's correlation indicated a positive and statistically significant association between CFD and PWB, $r(704) = .52$, 95% CI [.46, .57], $p < .001$ (Table 2). Students with higher CFD scores tended to report higher PWB scores. CFD and PWB shared approximately 27% of their variance ($r^2 = .27$), which leaves most of the variance in each variable unexplained. Spearman's rank-order correlation produced a similar result ($\rho = .48$, $p < .001$), indicating that the association did not depend on the assumption of normally distributed scores. These results describe an association between two self-reported scores; they do not indicate that CFD affects PWB.

A total of 95 participants (13.5%) gave identical responses to all items of at least one scale (58 on CFD, 72 on PWB, and 35 on both). After these participants were excluded ($n = 611$), the association was smaller but remained positive and statistically significant, $r(609) = .37$, 95% CI [.30, .44], $p < .001$ (Table 2), with $\rho = .37$. Internal consistency in this reduced sample was lower but still acceptable (CFD: $\alpha = .88$; PWB: $\alpha = .89$). Identical responses can be genuine, for example when a participant consistently endorses every statement, and the data cannot show whether these responses were careful or careless. The result is therefore reported as a sensitivity analysis and not as a correction of the main estimate.

4 Discussion

The present study found a positive association of substantial size between CFD and PWB among university students ($r = .52$, $p < .001$). In other words, students who more strongly experienced curiosity as a response to an information gap also tended to report higher PWB. At first glance, this finding may seem unexpected. CFD is rooted in the discomfort of not knowing, whereas well-being is generally associated with positive psychological functioning. The result therefore raises the question of how an experience that feels uncomfortable can be associated with better psychological functioning. In the following discussion, the empirical finding is kept separate from the explanations that might account for it. Only the association itself was tested in this study; the explanations are possibilities that future research needs to examine.

One possible explanation is that the discomfort underlying CFD is not necessarily the endpoint of the experience. It may instead prompt individuals to do something about what they do not know. Litman (2008) described CFD as a desire to resolve a perceived lack of knowledge, distinguishing it from curiosity that arises primarily from interest or enjoyment. For university students, this distinction may be especially meaningful because much of student life involves encountering unfamiliar material, realizing that one's knowledge is incomplete, and looking for answers. A strong urge to close an information gap may encourage students to remain engaged with questions rather than avoid them. The positive association is consistent with this possibility, but the present data cannot show whether information seeking actually explains the relationship.

Several other explanations, which are not mutually exclusive, are also plausible. First, the association may reflect an engagement pathway, in which the urge to resolve uncertainty supports sustained effort and, in turn, a sense of mastery and growth. Second, the direction may be reversed: students with higher PWB may have more psychological resources for approaching uncertainty and therefore report stronger CFD. Third, both variables may be related to a third factor, such as a general motivation to learn or a generally positive self-evaluation, which was not measured here. Fourth, part of the association may be due to measurement factors, as discussed below. None of these explanations was tested in the present study, and the data do not allow us to choose among them.

This interpretation also helps place the finding within the broader literature on curiosity. Curiosity is not a psychologically uniform experience. Interest curiosity and CFD have been shown to differ in their benefits and drawbacks (Whitecross & Smithson, 2023a) as well as in how people approach uncertainty (Whitecross & Smithson, 2023b). CFD can have less adaptive aspects; for example, it has been associated with greater openness to inaccurate information (Zedelius et al., 2022). At the same time, curiosity has also been linked to positive aspects of functioning and well-being, although these associations appear to depend on the form of curiosity examined (Hamilton et al., 2024; Li et al., 2023; Shi et al., 2025). In this sample, CFD was not associated with poorer well-being; higher CFD was accompanied by higher PWB.

The positive direction of the association is particularly interesting when the affective nature of CFD is considered. Previous work has linked CFD with feelings such as frustration and being bothered while waiting for information (Ryakhovskaya et al., 2022). However, experiencing an unpleasant feeling at a particular moment is not equivalent to having poor PWB overall. Ryff's (1989) model describes PWB in terms of broader functioning, including self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life, and personal growth. A student can experience discomfort when faced with an unanswered question while still feeling purposeful, capable of managing daily demands, connected to others, and motivated to develop. From this perspective, the uncomfortable component of CFD does not necessarily conflict with positive psychological functioning. This is a conceptual interpretation, because the CFD scale used here does not measure momentary affect.

Our result should also be considered alongside the inconsistent findings in previous research. Ibad et al. (2025) found no significant association between epistemic curiosity and PWB among university students, whereas Li et al. (2023) and Shi et al. (2025) reported relationships involving particular forms of curiosity and well-being. One reason for these differences may be the level at which curiosity is measured. A broad measure of epistemic curiosity may combine experiences driven by enjoyment with those driven by the desire to eliminate an information gap, and their psychological correlates may differ. By focusing on CFD, the present study did not treat curiosity as a single experience. Differences in samples, instruments, and well-being measures may also contribute to these inconsistencies, and a direct comparison is not possible with the present data.

The university setting may also help explain why this association was observed. Students are repeatedly required to deal with information they do not yet understand. Academic tasks, discussions, examinations, and everyday decision making all create opportunities to encounter uncertainty and unanswered questions. A stronger tendency to experience an information gap as something that needs to be resolved may therefore keep students engaged with their surroundings. Such engagement could be relevant to aspects of PWB such as environmental mastery and personal growth, although this interpretation remains tentative. The study measured CFD and PWB rather than the behaviors that might connect them, so the proposed process should be tested directly in future research.

The size of the observed association also requires critical consideration. A correlation of .52 indicates a substantial relationship, but it is not so high as to suggest that the two scales measure the same construct; they shared about 27% of their variance. Even so, some conceptual overlap cannot be excluded. Items about the urge to find answers and to keep working on problems may partly reflect general motivation and engagement, which are also part of PWB dimensions such as personal growth, purpose in life, and environmental mastery. In addition, both variables were measured by self-report, at the same time, in the same online format, and by the same respondents. Such conditions can inflate correlations through common-method variance, for instance through consistent response styles, a tendency to agree with positively worded statements, or socially desirable responding (Podsakoff et al., 2003). Mean item scores were close to 4 on the five-point scale for both instruments, which suggests that many participants endorsed items favorably. The sensitivity analysis is consistent with this concern: when the 95 participants who gave identical responses to all items of a scale were excluded, the correlation decreased to .37. Because identical

responses may be genuine, this result does not show that these participants responded carelessly, but it does show that the magnitude of the association depends on their inclusion and should be interpreted cautiously. No procedural remedies for common-method variance were applied, and discriminant validity between the two scales was not tested, so the true association may be smaller than the full-sample estimate, and the extent of any inflation cannot be quantified here.

It would also be inappropriate to interpret the coefficient as evidence that CFD increases PWB. Because the study was correlational and the variables were assessed at the same point in time, the direction of the relationship remains open. Students with stronger PWB may be more willing to engage with uncertainty and unanswered questions; CFD and PWB may influence each other over time; or both may be related to factors that were not examined. Longitudinal research would be particularly useful for distinguishing among these possibilities.

The findings have a broader implication for how uncomfortable psychological experiences are interpreted. Discomfort is not always synonymous with maladaptation. In the case of CFD, the unpleasant feeling associated with not knowing may coexist with motivation, engagement, and positive psychological functioning. This does not mean that CFD is always beneficial. Existing evidence concerning the acceptance of inaccurate information (Zedelius et al., 2022) illustrates why its consequences should not be assumed to be uniformly positive. The present result suggests that the psychological meaning of CFD may depend on what individuals do with the discomfort generated by an information gap, which remains to be tested.

Several limitations should be considered. First, the cross-sectional design does not allow causal or temporal conclusions. Second, participants were recruited through convenience sampling via online groups, and the sample was predominantly female (84.3%). Information on age, field of study, and institution was not analyzed. The findings therefore cannot be generalized to all university students in Indonesia or to other populations. Third, all data were self-reported, so the results may be affected by subjective interpretations, response tendencies (including uniform responding), and common-method variance. Fourth, validity evidence for the instruments was limited to a single-expert judgment of content validity; the present study did not examine the factor structure or discriminant validity of the two scales, and omega was estimated assuming a single dimension for each scale. Evidence on the factor structure of Indonesian versions of Ryff's scale has been mixed (Muttaqin, 2022; Nawantara et al., 2026), and the allocation of the 17 items used here to the six dimensions was not available. The CFD version used here also differed from the final 15-item published scale in the number of items and the response format, and the correspondence between its items and the original items was not examined. Fifth, only total scores were analyzed, so associations with specific PWB dimensions could not be examined. Future studies could use longitudinal designs, probability-based or more diverse samples, multiple methods or sources of data, and psychometric testing (such as confirmatory factor analysis) to evaluate whether CFD and PWB are empirically distinct. Experimental studies could examine responses to experimentally created information gaps, and behavioral measures of information seeking would help determine whether the motivation to resolve uncertainty is one of the processes underlying the relationship observed here.

Taken together, the findings indicate that CFD is positively and substantially associated with PWB among the university students in this sample. The result does not suggest that discomfort is inherently beneficial, nor does it establish that CFD causes greater well-being. Instead, it points to a more nuanced possibility: the discomfort of not knowing can exist alongside positive psychological functioning. Examining CFD separately from curiosity as a broad construct may therefore provide a clearer understanding of when curiosity is experienced as a burden, a motivational resource, or both.

5 Conclusion

The present study found a positive and substantial association between curiosity as a feeling of deprivation (CFD) and psychological well-being (PWB) among 706 university students in

Indonesia ($r = .52$ in the full sample and $.37$ after excluding participants with uniform responses). Students who reported a stronger tendency to experience curiosity in response to an unresolved information gap also tended to report higher PWB. This finding suggests that the uncomfortable experience of not knowing should not necessarily be viewed as psychologically maladaptive. Instead, CFD may coexist with positive psychological functioning, particularly in a university context where students frequently encounter unanswered questions and incomplete knowledge. The findings also highlight the value of distinguishing CFD from curiosity as a broad construct when examining its psychological correlates. However, the correlational, cross-sectional, self-report, and convenience-sample nature of the study does not permit causal or generalizable conclusions, and part of the association may reflect shared method variance. Future research should examine the relationship longitudinally and investigate whether information-seeking behavior or other processes help explain the association between CFD and PWB.

6 Implication

The findings have both theoretical and practical implications for understanding curiosity and PWB among university students. Theoretically, the positive association between CFD and PWB is consistent with the view that curiosity should be examined at the level of its specific motivational experience rather than as a homogeneous construct. In particular, CFD may involve an uncomfortable awareness of not knowing while remaining compatible with broader positive psychological functioning. This perspective extends the discussion of curiosity beyond the assumption that discomfort necessarily reflects maladaptive functioning.

Practically, the findings may be relevant to educational settings, but they should be applied with caution. University educators and student-support professionals may consider unanswered questions and information gaps not only as sources of frustration but also as opportunities for constructive engagement. Learning activities that encourage students to identify what they do not know and to seek reliable answers may provide a context in which curiosity is expressed productively. However, the findings do not imply that increasing CFD will improve PWB, and they should not be interpreted as evidence for an intervention effect. They highlight CFD as a psychological characteristic that may be relevant when considering students' well-being and engagement with learning.

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