Development and Validation of Impact of Psychological Distress Scale in University Teachers

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Abstract

Psychological distress is a prevailing problem in mental health care, but the need for a valid tool to measure its impact on teaching personnel is crucial. The objective of the study was to explore the patterns of psychological distress impact on university teachers. Forty university teachers were interviewed separately in the first phase to generate an item pool reflecting the impact of psychological distress experienced by them. Impact of Psychological Distress Scale (IPDS) is a self-report measure that was developed from a list of 37 items. Finally, a sample of 350 university teachers was given the Demographic Performa and IPDS. Factor analysis yielded a three-factor solution namely Interpersonal Dissatisfaction (IPD), Compromised Mental Health (CMH), and Workplace Difficulty (WPD). High internal consistency, test-retest reliability and convergent validity were reported in the scale. Construct validity was established with the help of Depression Anxiety Stress Scale (DASS). There was a highly significant positive correlation between IPDS and its sub-scales. The IPDS is a consistent and valid tool to measure the impact of psychological distress in teachers or faculty members.

Keywords: psychological distress, scale development, mental health, wellbeing, phenomenology, psychosocial functioning

Introduction

There is a vast presence of literature in psychiatric epidemiology on the existence of symptoms of psychological distress among patient population with evidently the slightest inclination towards the mainstream population. The biopsychosocial-spiritual model (Engel, 1980; Mukhtar & Rana, 2021) elucidates individuals' multifarious intricate interaction of biological predispositions, psychological variables, and social contact – past the psychiatric domain and into the premises of psychosocial-spiritual domains especially in the context of academia for both students and teachers. Psychological distress is among the most common presenting complaints of the psychiatric and non-psychiatric population (Horowitz, 2004). Psychological distress may be defined as the feelings of stress, anxiety, depressive tendencies and burn-out as an outcome of emotional negative experiences (Viertiö et al., 2021). The subjective appraisal of a life event as negative, uncontainable, unwanted and unpredictable could predict psychological distress (Pancer

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et al., 2000). Psychiatrists and social psychologists have long been proposing that distress is predicted by the perception of life events rather than the occurrence of events. A conscious perception of the environment acts as a mediator which paves along an indirect cognitive path networking social structure to health. The concept of psychological distress affords an understanding of the bio-psycho-social domains of human adaptation (Daniel et al., 2008; Selye, 1974). The accumulation of distressed events has a negative impact on health and the inability to manage the impact of psychological distress can result in mental health problems. This phenomenon is more prevalently recurring in high-pressure occupations and stressful job environments (Bhui et al., 2016).

Mental health problems at the workplace represent a significant burden for both an individual and society. Research has indicated that health professionals have a prevalence of higher mental health problems including addiction, emotional exhaustion and depression than the general population (Bennett & O'Donovan, 2001). Levels of depressive symptoms among teaching personnel can range from 45% to 84.6% reflecting the symptoms of personal distress (Othman & Sivasubramaniam, 2019). Their mental health and well-being could result from maintaining an equilibrium between the learning environment and professional practice. Hence, university teachers are prone and susceptible to high levels of stressors – be it psychological or environmental. Job-related stressors can cause strain and manifest as emotional distress among workers. Exposure to life events perceived as negative increases the risk of depressive tendencies or depression. Psychological distress can impact an individual's internalized and externalized symptoms in the face of perceived life events. Potential life stressors experienced by a university teacher include teaching/research/practice conflicts, workload, and workplace-home interface relationships (Agyapong et al., 2022; Fisher, 1994; Thorsen, 1996; Thompson & Dey, 1998). Moreover, job dissatisfaction and emotional strains are proposed to impact psychological distress (Qiu et al., 2021).

In addition, the social stigma attached to mental health problems (both towards students and teachers) presents a major obstacle to the exploration of this issue (Mukhtar & Mahmood, 2019; Mukhtar et al., 2022) and the lack of reporting of psychological distress hinders mental health practitioners and psychometrician to delve deeper into the impact of psychological distress in university teachers – who possess dual role and responsibility towards administrative care and student-teacher relationship (Corrigan, 2000; Link & Phelan, 2002). This could amplify more negative consequences at a personal level, including but not limited to abuse, intimate partner violence, job insecurity and dissatisfaction, further exacerbating the psychological distress meanwhile hindering the process of prognosis, treatment and outcome of the current studied population, especially in the wake of COVID-19 and post-pandemic era (Rana et al., 2022a; Rana et al., 2022b). Therefore, while there is ample evidence of the impact of psychological distress on teachers, there is an alarming paucity of substantial scientific evidence addressing its impact on university teachers' mental health. A need for scale development arose due to the emic approach (Berry, 1989) to highlight the multiple manifestations of the issue within a specific culture and offer broader insights into the etic approach of cross-cultural research– vastly across individualistic

and collectivistic contexts. The current research's objective is to explore and develop a valid and reliable tool for measuring the experiences and impact of psychological distress on university teachers.

Method

There were three stages of scale development. Stage I described the process of collecting and exploring the impact of psychological distress. Empirical validation of the scale was established in stage II and psychometric properties were established in stage III.

Phase I: Exploring Phenomenology

The objective of phase I was to explore the different patterns and expressions of the impact of psychological distress in university teachers. In this phase, phenomenology was explored to develop an understanding of the impact of psychological distress on university teachers. A total of $N=40$ participants ($n=20$ men and $n=20$ women) were included in the phenomenology process. All the participants were asked open-ended interview questions to express the patterns and the magnitude of psychological distress. Based on their responses, a list of items was generated. After omitting ambiguous, repetitive, and idiosyncratic words, the final list of items was completed for expert validation.

Step II: Empirical Validation Through Experts

For empirical validation of the final list of items of impact of psychological distress, 20 mental health practitioners were consulted. These experts were selected through purposive sampling comprising psychologists with more than 7 years of teaching, research and working experience in a university setting. All the participants were requested to rate each item to the degree in which it reflected the construct of psychological distress' impact according to the provided operational definition. All of the items that were not endorsed by at least 1/3rd of the experts were excluded, which was then converted into a self-report 3-point rating scale and was named as Impact of Psychological Distress Scale (IPDS).

Pilot Study

The purpose of conducting a pilot study was to ascertain the user-friendliness and comprehension of instructions and items on the scale. In this phase, a sample of university teachers, consisting of men and women teaching faculty members from public and private sector universities, was selected. A small representative sample of the main population was selected through purposive sampling. All those participants who participated in phase I and II were excluded from this phase. After completing the pilot study, no difficulty was recounted in understanding the layout of the measure.

Phase III: Psychometric Properties

Factor structure and psychometric properties including validity and reliability of the IPDS were established in stage III. Teachers from multiple departments and job scales were selected for the main study. Through the purposive sampling technique, 350 participants were selected from public and private sector universities. A newly constructed 3-point rating scale which comprised

37 items was given to the sample. IPDS comprised of three factors: Interpersonal Dissatisfaction, Compromised Mental Health, and Workplace Difficulties.

Instruments

Demographic Performa. A Demographic Performa consisted of age, gender, qualification, designation, subject of teaching, department and university (public or private) etc.

Depression Anxiety Stress Scale (DASS). Depression Anxiety Stress Scale (DASS) was used to establish the concurrent validity of the Impact of Psychological Distress Scale (IPDS). DASS (Lovibond & Lovibond, 1995) consists of 21 items and the Cronbach's alpha for Depression Anxiety Stress Scale was 0.94, 0.85, and 0.87, respectively. The maximum score of the DASS-21 is forty-two in each of the depression, anxiety and stress subscales.

Procedure

Initially, permission was obtained from the authorities, and the study participants were ethically informed about the rationale and objective of the research. The data was gathered from 350 participants from private and public universities. They were assured of anonymity, privacy and confidentiality of the information, which would be used solely for research purposes. Participants took 10-15 minutes to complete the questionnaire. During a week's interval, about 15% of the participants who agreed to re-testing were re-contacted for test-retest reliability of IPDS by keeping all the conditions standardized (same instructor, instructions, and settings). All of the study participants completed the testing protocol and thus, no testing protocol had to be discarded. Data was analyzed on the IBM-SPSS-21 version.

Ethical Considerations

- Ethical considerations were abided by throughout the study. Institutional Review Board (IRB) approved the study and testing protocol.
- The anonymity, confidentiality and privacy of the participants were assured from data gathering till data reporting.
- All the participants had an equal chance and right to participation and withdraw from the study at any stage.
- Informed consent and debriefing were carried out in the best-standardized environment.

Results

The results described the factorial structure, reliability and validity of IPDS. Principal Component Factor Analysis with Varimax Rotation was used to explore the underlying factor structure of IPDS. Varimax rotation was used assuming that it maximizes the simplification, variance and interpretability of the scale's factors. The obtained factors from Varimax rotation were independent of one another (Kahn, 2006). To determine and identify the initial factor structure of the scale and represent it in the form of a graphical representation of Eigen values, Eigenvalue > 1 and scree plot were used (Cattell, 1966; Kim & Mueller, 1978). Factor loadings were assessed through Kaiser's criterion (1974) of total explained variance on the basis of factor analysis. The three-factor solution was retained (Table 1).

Table 1

Factor Structure and Eigenvalues of 37 Items of Impact of Psychological Distress Scale (IPDS) with Varimax Rotation (N=350)
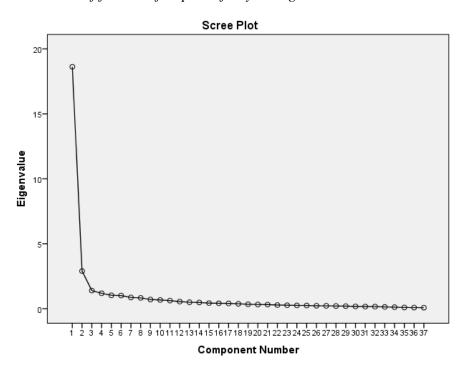
Item. No	Factor I	Factor II	Factor III
1	**.81**	.05	.31
2	**.80**	.15	.30
3	**.79**	.18	.27
4	**.79**	.25	.27
5	**.78**	.29	.26
6	**.74**	.12	.43
7	**.73**	.07	.44
8	**.72**	.25	.27
9	**.71**	.44	.10
10	**.70**	.35	.27
11	**.69**	.35	.32
12	**.67**	.25	.28
13	**.65**	.31	.06
14	**.64**	.31	.27
15	**.63**	.28	.28
16	**.61**	.41	.24
17	**.60**	.44	.15
18	**.55**	.24	.18
19	**.54**	.21	.31
20	**.52**	.26	.52
21	.12	**.80**	.15
22	.14	**.79**	.29
23	.23	**.78**	.19
24	.10	**.77**	.27
25	.15	**.69**	.33
26	.22	**.65**	.29
27	.31	**.64**	.26
28	.26	**.56**	.26
29	.26	**.54**	.28
30	.35	**.53**	.39
31	.33	.31	**.75**
32	.21	.25	**.73**
33	.29	.33	**.66**
34	.50	.26	**.55**
35	.50	.20	**.53**
36	.37	.34	**.52**

37	.34	.14	**.50**
Eigenvalues	18.6	2.9	1.4
% Variance	50.3	7.8	3.7
Cumulative %	50.3	58.1	61.9

Note. Items with .50 or above loading are boldfaced.

The items retaining criteria in a factor was .50 (Hair et al., 1998) and the items that had fallen within this range were retained in that certain factor of the scale. For the model to be fitted 6, 5, 4 and 3 factor solutions were executed. However, the three-factor solution was shown to be the best-fit model, with no dubious items and a user-friendly factor structure. The items' content was another criterion for the retention of certain factors. Factor structure excluded the items that had less than .50 factor loading in a factor. A total of 61.9% variance was explained, with each factor containing a minimum of 7 and a maximum of 20 items. Further, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was found to be .95, and Bartlett's test of Sphericity was significant (χ^2 (666) = 8014.72, $p < .001$).

Figure 1

Scree Plot showed extraction of factors of Impact of Psychological Distress Scale

The scree plot indicated which Eigenvalues and number of factors were retained in the factor analysis of the scale (Figure 1). The scree plot facilitated in determining the total number of factors. The Kaiser-Guttman's retention criterion of Eigenvalues indicted that the 3 factors with Eigenvalue >1 can be retained. These factors were cross-loaded in order to organize them in a categorical way.

Factor Description

By considering the commonality of the themes that emerged and the correspondence of each item in the factor, a label was assigned to each factor.

Factor 1: Interpersonal Dissatisfaction. There were twenty items in the first factor of the scale. A high score on this sub-scale showed an individual's dissatisfaction in dealing with other people. The sample items included impatience and harsh behavior towards students; distraction and dissatisfaction with their own and students' performance; affected relationships with colleagues; and so on.

Factor 2: Compromised Mental Health. There were ten items in the second factor of the scale. A high score on this sub-scale denotes confusion and disorientation towards personal mental health. The sample items included feeling exhausted; burden on nerves; feeling sad and anxious; feeling de-motivated towards personal care and wellbeing; and so on.

Factor 3: Workplace Difficulties. There were seven items in the third factor of the scale. A high score on this sub-scale indicated a person's inefficiency and difficulty in handling work-related issues. The sample items included poor time management; unprepared class lectures; missed work schedule; futility for promotion; and so on.

Psychometric Properties of Impact of Psychological Distress Scale (IPDS)

The psychometric properties of IPDS are given below in Table 2.

Table 2

Psychometric Properties of Impact of Psychological Distress Scale (IPDS, N= 350)

Factor	M	SD	Range	Cronbach's α
1. IPD	21.38	15.23	0.0-3.7	.91
2. CMH	14.15	8.72	0.2-3.9	.92
3. WPD	6.50	4.54	0.0-3.7	.89
4. IPDS-T	42.03	28.49	0.1-3.6	.97

Note. n = number of items. α = Cronbach's alpha. IPD= Interpersonal Dissatisfaction; CMH=Compromised Mental Health; WPD= Workplace Difficulties; IPDS-T= Impact of Psychological Distress Scale Total

As shown in Table 2, the means, standard deviations, Cronbach's alpha, and range are presented. The results indicated that the value of Cronbach's Alpha ranges from .89 to .97, illustrating that the Impact of Psychological Distress Scale (IPDS) and its factors have high internal consistency. Moreover, the skewness ranges from .48 to .60 for the Impact of Psychological Distress Scale (IPDS).

The results showed in Table 3 that all the factors of Impact of Psychological Distress Scale (IPDS) have a high significant positive correlation ($p<.01$). Also, the total IPDS score has a high significant positive correlation with its sub-scales, primarily interpersonal dissatisfaction challenges ($r = .95$, $p < .01$), compromised mental health ($r = .83$, $p < .01$), and workplace difficulties ($r = .88$, $p < .01$).

Table 3

Summary of Intercorrelations of Impact of Psychological Distress Scale (IPDS) and its Subscales (N=350)

Factor	M	SD	1	2	3	4
1. IPD	21.38	15.23	−			
2. CMH	14.15	8.72	.66**	−		
3. WPD	6.50	4.54	.80**	.68**	−	
4. IPDS-T	42.03	28.49	.94**	.82**	.87**	−

Note. **$p < .01$. IPD= Interpersonal Dissatisfaction; CMH=Compromised Mental Health; WPD= Workplace Difficulties; IPDS-T= Impact of Psychological Distress Scale Total

Validation of Impact of Psychological Distress Scale (IPDS)

To establish the concurrent validity of the Impact of Psychological Distress Scale (IPDS), Pearson Product Moment Correlation was computed through Depression Anxiety Stress Scale (DASS).

Table 4

Summary of Intercorrelations Impact of Psychological Distress Scale (IPDS), Sub-Scales, and DASS (N=350)

Measure	M	SD	1	2	3	4	5	6	7	8
1. IPD	21.38	15.23	—							
2. CMH	14.15	8.72	.83**	—						
3. WPD	6.50	4.54	.84**	.76**	—					
4. IPDS-T	42.03	28.49	.97**	.92**	.91**	—				
5. Depression	6.01	3.44	.52**	.51**	.46**	.52**	—			
6. Anxiety	5.01	2.17	.45**	.53**	.43**	.51**	.67**	—		
7. Stress	5.13	4.21	.43**	.48**	.39**	.44**	.72**	.80**	—	
8. DASS T	16.15	9.83	.51**	.55**	.46**	.53**	.90**	.90**	.91**	—

Note. IPD= Interpersonal Dissatisfaction; CMH=Compromised Mental Health; WPD= Workplace Difficulties; IPDS-T= Impact of Psychological Distress Scale Total; DASS T = Total of Depression Anxiety Stress Scale.
**$p < .01$.

The results in table 4 indicated a significant positive correlation with each other. The DASS and its factors have a significant positive correlation with Impact of Psychological Distress and its factors.

The results in Table 5 showed that there was a significant mean difference among teaching faculty members from different universities on IPDS and its sub-scales: interpersonal dissatisfaction (IPD) and Workplace Differences (WPD) at (***$p < .001$), and Compromised Mental Health (CMH) at (**$p < .01$). There was a significant mean difference among teachers of public and private universities at (***$p < .001$). The results indicated that overall, teachers from

private universities experience a significant impact of psychological distress than those at public universities.

Table 5

Means, Standard Deviations, t and p values of the Teachers of Different Universities on Impact of Psychological Distress and its Sub-Scales (N=350)

Variable	Private		Public		t(348)	p	Cohen's d
	M	SD	M	SD			
IPD	35.60	16.42	18.62	15.23	6.60	.00	1.07
CMH	17.51	8.61	14.71	6.04	2.10	.02	0.37
WPD	11.62	7.11	7.62	5.51	5.30	.00	0.62
IPDS-T	64.73	32.14	40.95	26.78	6.10	.00	0.80

Note. IPD= Interpersonal Dissatisfaction; CMH=Compromised Mental Health; WPD= Workplace Difficulties; IPDS-T= Impact of Psychological Distress Scale Total
**$p< .01$. ***$p< .001$.

Discussion

The main objective of the current study was to develop a reliable and valid tool to measure the impact of psychological distress on university teachers, indigenously and internationally, followed by the identification of the association between the psychological distress' impact and the public/private type of university. This study is one of the few that provides the development of a reliable and valid tool, alongside the repeated measure validation of the impact of psychological distress on university teachers. After linguistic modification, a list of 37 items of the Impact of Psychological Distress Scale (IPDS) was administered to 350 university teachers. PCA revealed a three-factor solution of IPDS namely Interpersonal Dissatisfaction (IPD), Compromised Mental Health (CMH) and Workplace Difficulties (WPD).

Factor 1 of IPDS consisted of 20 items related to a person's dissatisfaction in dealing with others. Teachers in the profession are subjected to high levels of personal dissatisfaction as the research has supported that they have difficulty in disclosing emotional distress to anyone (Firth-Cozens, 1987). The impact of psychological distress has enhanced greatly among professionals in academia with time (Shim et al., 2016). A large body of literature (e.g., Adrian et al., 2011; Carter et al., 2012) has supported the nature of interpersonal dissatisfaction, which may adversely compromise mental health and personal well-being not merely in terms of disorder but in the overall sense of functioning, and personal satisfaction. The interpersonal dissatisfaction seems to be associated with the perception of well-being, as it shapes psychosocial functioning and develops sound mental health. Factor 2 of IPDS consisted of 10 items, related to confusion and disorientation towards personal mental health and well-being. The foremost salient feature of this subscale is the lack of concern for personal mental health, as it can invoke feelings of inadequacy (ranging from sadness to anxiety) and negative evaluation (ranging from lack of self-regulation to mental health problems). Factor 3 of IPDS consisted of 7 items related to an individual's inefficiency and difficulty in handling a work-related issue. Other evidence suggests that disruptive

home and work balance were associated with a high level of psychological distress as suggested in factor 3. It seems that the impact of psychological distress affects their occupational performance, especially in a competitive and high-pressure teaching job, where one's functioning becomes subordinate to workplace challenges.

Reported work pressure and workload have been cited as the most common causes of psychological distress. The impact of psychological distress could be secondary to work pressure, resulting from psychological distress, or psychological distress could be the cause of higher perceived work pressure (Ullah et al., 2022; Hasan et al., 2021; Rana et al., 2022a). There is a continued concern about long working hours in academia and practice, and adverse effects on mood, cognition and negative emotions. Rank has been found to be associated with the magnitude of psychological distress as the higher the rank, the lesser the severity of the impact of psychological distress as the analysis indicated that private university teachers experience more mental health concerns and severe psychological distress as compared to their counterparts in the public university sector where tenure, ranking, promotion, relative flexibility in time and duties harbor a different overall impact.

The psychometric properties of IPDS were encouraging. Cronbach's Alpha was used to establish IPDS' internal consistency which was .96 for the total scale's score with 37 items after factor analysis. The IPDS was also found to have high internal consistency which was evident by the reliability coefficients. Since the items of IPDS were constructed on the phenomenological experiences and expression of the sample population and were expert-validated, hence the scale satisfied the criteria of face and content validity. DASS was used to establish the concurrent validity, and a significant positive correlation was found between the total and factors of the IPDS and the DASS. Test-retest reliability of IPDS was also high which was taken after a week. To establish the split-half reliability, the IPDS scale was halved into 2 scales by using the even-and-odd method, and its result was also significantly high. The relationship between the impact of psychological distress and its subscales is consistent with the literature (e.g., Katz et al., 2011) suggesting that psychological distress impacts, and can impair interpersonal functioning, mental health wellbeing, and workplace performance. Another interesting finding, less consistent with the previous literature, was that private university teachers are prone to more psychological problems associated with psychological distress than public sector university teachers.

Studies on other professional groups of university teachers do not always link emotional issues with work pressure, which indicates that these pressures are peculiarly related to university teachers (Shim et al., 2016). The impact of psychological distress seems more prevalent among university teachers of all university types, many of whom avoid seeking professional help or social support from their colleagues. The adverse effect of psychological distress is depicted considerably in personal, emotional and workplace domains. The need for pragmatic implementation and critical evaluation of programs focused on the prediction, prevention, and pacification of the impact of psychological distress is highly recommended.

Conclusion

The current study has made significant contributions by exploring the experiences and expressions of psychological distress' impact on university teachers' functioning, both in a personal context and occupational setting. The IPDS, with standardized psychometric properties, is a reliable and valid tool that has the potential to be incorporated into scientific research. This measure can also be used for measuring, evaluating and monitoring the progress and effectiveness in policy-making, OSH (occupational safety and health), mental health practices (therapy, counseling, guidance, self-help), and progressive functioning of an individual, apprentices and academic institute. The current research was also an endeavour to develop an assessment tool measuring the different impacts of psychological distress in academic and professional settings, largely based on empirically derived data. Furthermore, this research also offers the use of a personal functional profile for academia and an incentive to seek professional help.

Limitations and Recommendations

Despite its strengths, the study presents few limitations. The sample is limited to university teachers, and while the scale was designed for this specific group, its applicability to other populations (e.g., primary or secondary school teachers, and non-academic professionals) remains untested. Future research could seek to expand the sample diversity to assess whether the IPDS holds relevance for broader teaching populations or other high-stress occupations.

Future research could extend this study by expanding the sample to include a broader range of educators, and possibly other high-stress professions could help assess the applicability of the IPDS in varied settings. Investigating the scale's use in different cultural or regional contexts would also enhance the generalizability of the findings, particularly given the varied cultural norms and stressors that influence mental health across the globe. Additionally, longitudinal research could provide deeper insights into the cumulative effects of psychological distress over time and inform intervention strategies aimed at early detection and prevention. Since the COVID-19 pandemic, there has been a surge in suicidal ideations along with psychological distress and anxiety (Hasan et al., 2021; Qadri, et al., 2021). Furthermore, given the significant correlation between the IPDS and its subscales, future studies could explore specific intervention strategies that target interpersonal dissatisfaction, compromised mental health, or workplace difficulty separately. By doing so, institutions can implement more precise mental health initiatives that address the specific sources of distress identified in faculty members.

Implications

The Impact of Psychological Distress Scale (IPDS) developed and validated in this study offers several valuable implications for both academic professionals and mental healthcare practitioners. First, the scale provides university administrators, mental health researchers and policymakers with a robust psychometric tool to assess psychological distress among university teachers. With its focus on three subscales of interpersonal dissatisfaction (IPD), compromised mental health (CMH) and workplace difficulty (WPD), the IPDS can offer insights to institutions in identifying the mental health challenges that directly impact teaching effectiveness and faculty

well-being. Moreover, the scale's strong psychometric properties, including high internal consistency, test-retest reliability, and convergent validity, ensure that it can be reliably used across different academic institutions to track mental health over time. This, consequently, could foster the development of targeted interventions (Mukhtar, 2019) aimed at reducing distress and improving job satisfaction, productivity, and holistic well-being in academic settings (Mukhtar et al., 2024; Rana et al., 2021). Mental healthcare professionals can also integrate the IPDS into counseling programs to better tailor therapeutic approaches to the unique stressors faced by academic faculty, especially in the wake of COVID-19 and the post-pandemic period (Mukhtar, 2024; Rana et al., 2020).

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