

PREDICTORS OF JOB SATISFACTION OF PSYCHOLOGISTS: A SCOPING REVIEW

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**Predictors of Psychologists' Job Satisfaction: A
Scoping Review**

Final Thesis

Split, July 2024.

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Assist. Prof. Ivan Buljan, PhD

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1. Introduction

In organizational psychology, the most recognized and used definition of job satisfaction is that of Locke, who described it as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (Locke, 1970). In other words, it is a construct that encompasses multidimensional psychological responses to a person’s job, with cognitive (thoughts and beliefs), affective (feelings and emotions), and behavioral components (actions and reactions) (Hulin and Judge, 2003). This tripartite conceptualization of job satisfaction fits well with typical conceptualizations of social attitudes, however, social attitudes are generally weak predictors of specific behaviors (Wicker, 1969), while job attitudes are usually reliable and moderately strongly related to relevant job behaviors (Eid and Larsen, 2008). What differentiates job satisfaction from social attitudes is that it is specifically related to an individual’s feelings, thoughts, and behaviors regarding their occupation (Eid and Larsen, 2008), while social attitudes encompass a broader spectrum of beliefs and feelings about societal issues and groups (Wicker, 1969). The term job satisfaction is sometimes found to be used interchangeably with the term work satisfaction, however, there is a notable difference between the two constructs which should be acknowledged. Job satisfaction has been defined as the attitude one develops toward their job, which can be influenced by various external (e.g. pay, status, opportunity) and internal (e.g. personal fulfillment, achievement) factors (Locke, 1976). On the other hand, work satisfaction could be seen as a broader construct, focusing on the overall contentment with one’s work life, considering the entire work career instead of one particular job. It is considered a dynamic process that goes beyond satisfaction with one’s job and varies across time, personal preferences, and life situations (Büssing & Bissels, 1998). Other organizational terms that have been linked to job satisfaction are burnout and turnover. Burnout and job satisfaction represent two opposite sides of one’s satisfaction with their job; burnout being defined as physical and psychological symptoms related to job stress that include emotional exhaustion and a sense of lacking personal accomplishments (Maslach and Jackson, 1981), whereas job satisfaction is associated with the feelings of contentment and personal fulfillment derived from one’s occupation. On the other hand, turnover encompasses both employees' voluntary and involuntary discharge from work. Research shows that low job satisfaction significantly contributes to levels of burnout and consequently, employees who experience symptoms of burnout show increased turnover intent, resulting in eventually leaving their job (Wang et al., 2020). Therefore, both burnout and low satisfaction are strongly associated with turnover rates. Even though the constructs of job satisfaction, burnout, and

turnover intention are different regarding cognitive, affective, and behavioral components, the literature demonstrates that they are closely interlinked and have a significant combined impact on the organizational field.

2.1. Job Satisfaction as a Psychological Construct

The Relationship between Job Satisfaction and Well-being

The study done by Nagy (2002) found that job satisfaction is strongly related to an individual's overall well-being and that it predicts different organizational behaviors, including turnover, absenteeism, and self-reported job performance. Additionally, studies show that people experience a drop in personal well-being when unemployed, even when they receive the same income as when they work (Frey and Stutzer 2002). A meta-analysis done on 485 studies examining the relationship between job satisfaction and health found that job satisfaction had a significant positive correlation with various measures of mental health including depression, anxiety, burnout, self-esteem, and general mental health (Faragher et al., 2005). There was also a small positive relationship found between job satisfaction and good physical health (measures including cardiovascular diseases, musculoskeletal disorders, and psychosomatic complaints) (Faragher et al., 2005).

Importance of Job Satisfaction Research in the Organizational Context

The findings from the study done by Faragher et al. (2005) are empirical evidence that highlights the importance of researching the construct of job satisfaction and its implications in workplaces generally, but especially for the psychological and physical health of workers, among other important factors of well-being. Job satisfaction research is not only important in the context of employees, but the organizations and employers they work for as well. As stated above, research shows that organizational aspects such as performance, productivity, turnover rates, and absenteeism are all associated with job satisfaction. For example, employees who are satisfied with their jobs demonstrate higher levels of performance and productivity (Judge et al., 2001), and lower turnover intentions (Alam and Asim, 2019). Studies also show that a positive work climate significantly increases job satisfaction and reduces emotional exhaustion among employees (Schaufeli & Bakker, 2004). These findings suggest that creating a positive work environment is beneficial for organizations in the sense that promoting higher job satisfaction among workers could potentially lead to more productivity and smaller recruitment and training costs. Variables associated with job satisfaction have also been studied in the context of the psychological field of work and show that positive relational factors at work,

such as effective teamwork and good supervisory relationships, significantly predicted job satisfaction among psychologists, which in turn was associated with reduced turnover potential (Roncalli and Byrne, 2016).

Measuring Job Satisfaction

Job satisfaction has been a widely researched topic and is measured using both global and facet measures. Global measurements center on an individual's general feelings regarding the job and are used to predict behavior such as leaving the job. Therefore, studies using global measures report that overall job satisfaction is positively correlated with employee well-being and life satisfaction (Spector, 1997). Research also shows that high levels of global satisfaction are associated with lower rates of absenteeism and fewer workplace conflicts (Judge et al., 2001). Employees with greater overall job satisfaction are also more productive and less likely to leave their jobs (Judge et al., 2001). On the other hand, facet measurements are used to identify satisfaction with particular parts of one's job. They emphasize the strengths and weaknesses of specific aspects of the job (Ironson et al, 1989). Facets might include a variety of occupational components such as pay, supervision, coworkers, job conditions, or the amount of personal growth offered at work (Spector, 1997). Studies using facet measures report that positive relationships with supervisors and coworkers significantly enhance job satisfaction (Judge et al., 2001). Additionally, according to Spector (1997), satisfaction with the nature of work itself was often found to be the strongest predictor for job satisfaction, along with good physical work conditions and a supportive work environment. Job satisfaction scales vary in both the variety and number of facets they assess, however, there isn't sufficient guidance available to determine which aspects should be evaluated in which contexts (Brief, 1998). The systematization of instruments and data regarding the importance of different job aspects in different contexts of work would be a strong lead for improving and informing various work policies and organizational values in society. This is of great importance for the psychological field of work, given the impact psychologists have on a variety of people they work with daily, and the unique emotional strain they are exposed to at work. Identifying which aspects of the job are most satisfying or inversely, most dissatisfying is not only a proposition for future research, but an opportunity to better the existing support programs and organizational policies under which psychologists work. The improvement of these aspects could also lead to better professional development and retention of workers, especially in fields that are considered to be high risk regarding burnout and turnover intentions.

2.2. Job Satisfaction in Psychological Profession

Assessment of job satisfaction among psychologists

Over time, a growing number of research has been done to assess the levels of job satisfaction of psychologists. There was, and still is, a profound need for this, given that psychologists work directly with people of all backgrounds and have the unique ability to impact their mental health. The psychological occupation has been associated with multidimensional psychological distress, primarily including a high degree of emotional strain and constant demands for empathy, which all pose a significant risk of burnout (Simionato and Simpson, 2018). A study by Rupert and Morgan (2005) reports burnout prevalence rates of 44.1% among surveyed psychologists, with an additional 26.3% of psychologists being moderately burnt out, and only 29.6% scoring in the lower range. They also found that solo practitioners reported less emotional exhaustion than agency respondents and that women appear to be at the greatest risk for emotional exhaustion in agency settings (Rupert and Morgan, 2005). Generally, it has been found that psychologists who do not cope well with occupational stressors face a great risk of depression, suicide, burnout, substance abuse, and relational problems (Norcross, 2000). This is an indication that there is a need for organized support programs and that more focus should be placed on the health of psychologists than it was beforehand.

Job Satisfaction across psychological domains

On the other hand, studies from some domains of psychological work report high overall satisfaction. A meta-analysis done on school psychologists showed that 85% of them expressed satisfaction with their job, more specifically with their coworkers, the opportunity to stay busy on the job, the opportunity to work independently, and the opportunity to be of service to others (VanVoorhis and Levinson, 2006). A longitudinal study done in the United States also reported high levels of job satisfaction among educational psychologists, finding that the levels of job satisfaction were stable across 22 years of the study (Worrell et al., 2006). Regarding clinical psychology, there are conflicting findings within the literature, with some researchers reporting only moderate levels (Sousa and Coleta, 2015), while others report high levels of satisfaction (Norcross and Karpiak, 2012). Those working in correctional settings also report moderate levels of job satisfaction (Boothby and Clements, 2002). This poses a question to be asked about the different conditions psychologists work in, and whether those conditions impact the reported level of satisfaction among them. Hence, some studies highlight that the psychologists

working in private clinics or other independent settings report being more satisfied than their colleagues in state institutions (Sweet et al., 2015) as well as the positive impact that supportive supervisors and/or colleagues have on overall satisfaction (Roncalli and Byrne, 2016; Kavenská et al., 2013).

2.3. Evidence Gap

As mentioned above, job satisfaction can be assessed with both global and facet measures. Despite extensive research on job satisfaction, significant gaps remain, particularly regarding the standardization of measurement tools and the understanding of job satisfaction across different psychological domains. Different instruments have been used to measure job satisfaction, with global measures such as the Overall Job Satisfaction Scale (OJS; Brayfield & Rothe, 1951), and facet-specific approaches like the Job Descriptive Index (JDI; Smith et al., 1969) and the Minnesota Satisfaction Questionnaire (MSQ; Weiss et al., 1967). The strength of facet measurements lies in highlighting which aspects have the strongest association with job satisfaction, which could guide support programs and organization policies toward beneficial changes. However, the lack of a standardized measurement framework results in inconsistent findings, complicating the synthesis of research results and hindering the development of effective interventions (Brief, 1998). Additionally, despite the abundance of literature on this topic, there is not much consensus on which predictors are most important, with some research reporting that satisfaction is derived from relationships with coworkers and clients (Judge et al., 2001), while others highlight working independently (Sweet et al., 2015) or that satisfaction is found in the nature of the work (Spector, 1997). Furthermore, even though studies show the positive impact of supportive supervisors and colleagues on overall satisfaction (Roncalli & Byrne, 2016; Kavenská et al., 2013), there is insufficient guidance on fostering and maintaining these relationships in various psychological fields. Similarly, there is a lack of research on the behaviors and personalities of psychologists who are well-adjusted to the unique occupational stressors they face, even though it has been found that psychologists who do not cope well with occupational stressors face a great possibility of depression, suicide, burnout, substance abuse, and relational problems (Norcross, 2000).

To the best of our knowledge, there are no recent systematic reviews on the job satisfaction of psychologists across multiple domains of their work (school psychologists, psychotherapists, correctional psychologists, etc.) or specific predictors. Considering that it is well known that domains of work can vastly differ for psychologists, the predictors of job satisfaction in each of those domains should be just as recognized. As stated above, literature

shows that levels of job satisfaction among psychologists vary significantly, therefore the purpose of a literature scope on this topic would be to help identify which predictors are most important in certain domains. A comprehensive literature scope would also point out any existing literature gaps, given that many studies focus on school psychologists or general healthcare providers, leaving a gap in understanding satisfaction within other domains of psychology. Moreover, certain job-affecting aspects have not been well examined in research, such as increased digital and administrative demands at workplaces. Addressing these gaps through targeted research is the first step toward creating well-informed interventions and better support policies for psychologists. Each work setting comes with its advantages and unique challenges, which should be addressed accordingly to maximize both employee satisfaction and the overall efficiency of the organization, school, or clinic they work for. It is of great importance that any change in this field is systematically done with respect to the large number of population that rely on professional help from psychologists, therefore moving away from assumptions of the psychological career and toward researched evidence is the most appropriate way.

2.4. Objectives

Research Aims

Research aim 1: To investigate which variables predict psychologists' job satisfaction in the specific fields of psychology the most.

Research aim 2: To determine which predictors were used for the assessment of psychologists' job satisfaction most frequently.

Research aim 3: To examine which instruments were used to assess job satisfaction among psychologists.

Hypotheses

H1: The most frequent predictors of psychologists' job satisfaction will be those related to their work environment and support across all fields of psychology.

H2: The most frequently used predictors in the assessment of psychologists' job satisfaction will be those related to work environment and support.

H3: The most frequently used instrument for measuring psychologists' job satisfaction will be non-validated measures.

2. Methods

2.1. Study Design

This was a scoping review of studies assessing job satisfaction in psychologists. The study protocol was registered at OSF (<https://osf.io/j3wue/>) and the review was conducted using the methodology for scoping reviews from the Joanna Briggs Institute (<https://jbi.global/>). We followed the PRISMA-ScR guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews) to ensure transparent and comprehensive reporting (Tricco et al., 2018). The full PRISMA-ScR checklist can be found in the supplement (Table A).

2.2. Eligibility Criteria

We limited our search for inclusion in the scoping review to quantitative empirical studies that involved the measurement of job satisfaction of practicing psychologists. The exclusion criteria were the following:

- a) Studies that did not specify the levels of job satisfaction of psychologists but rather focused on burnout, turnover, and mental health in general;
- b) Literature reviews and qualitative research articles, due to not having quantitative data;
- c) Samples from which psychologists could not be differentiated from other health workers;
- d) Samples that contained psychologists who were either in retirement or had not started working yet;
- e) Research that was not published in English.

2.3. Information Sources and Search

The information search was systematically performed from the inception of electronic bibliographic databases Web of Science (WoS) and PubMed. The search strategies were created and applied by the authors in November of 2023. We used PubMed as a source for our review as it is widely regarded as a valuable search system for various scientific disciplines because of its robust coverage of peer-reviewed content and capacity for efficient data handling (Gusenbauer and Haddaway, 2020). Furthermore, research shows that including WoS in database search combinations results in higher recall rates, enhancing the comprehensiveness of the obtained scope (Bramer et al., 2017).

Table 1

PICO elements

| Population | Intervention | Comparison | Outcome | Type of Study |
|----------------------------|--------------------------------|------------|---------------------------|---------------|
| Psychologist | Predictors of job satisfaction | | Job satisfaction | Quantitative |
| Therapist | | | Career contentment | |
| Counselor | | | Work happiness | |
| Mental health professional | | | Job fulfillment | |
| | | | Professional satisfaction | |
| | | | Occupational well-being | |
| | | | Work satisfaction | |

Search strategies

WOS:

(Psychologist OR Therapist OR Counselor OR Mental health professional) AND (Job satisfaction OR Career contentment OR Work happiness OR Job fulfillment OR Professional satisfaction OR Occupational well-being OR work satisfaction)

PubMed:

(Psycholog*[Title/Abstract] OR Therap*[Title/Abstract] OR Counsell*[Title/Abstract] OR mental health profession*[Title/Abstract]) AND (job satisf*[Title/Abstract] OR career contentment [Title/Abstract] OR work happ*[Title/Abstract] OR job fulfil*[Title/Abstract] OR professional satisfaction[Title/Abstract] OR occupational well being[Title/Abstract] OR work satisf*[Title/Abstract])

Screening

All retrieved articles were exported to the Zotero reference manager and deduplicated. Screening was performed by two independent reviewers, who followed the prior agreed inclusion criteria. The first reviewer (TV) screened all the titles and abstracts for eligibility and grouped them into categories *include* or *exclude*, and the second author (IB) screened both categories. Articles that were not clear whether they fulfilled the inclusion criteria were included for full-text review. The full texts of the papers in the *include* category were retrieved and individually analyzed by the first reviewer (TV) and verified by other (IB).

2.4. Data Charting Process

A comprehensive data extraction and assessment tool was developed in Excel. It was created in December of 2023 in agreement of both authors. The purpose of the tool was to extract the most important data from the articles needed for our analysis, with regard to our research objectives.

The extracted data included:

- a) *Type of publication*- format of the publication (e.g. research article);
- b) *Year of publishing*- year in which the publication was made available for the public;
- c) *Area of psychology*- specific field or subfield of psychology to which the publication relates (e.g. educational, clinical);
- d) *Setting*- country or geographical location in which the research was conducted
- e) *Board approval*- whether the research was approved by an ethics board or institutional review board (IRB) before being conducted (Yes/No);
- f) *Research design*- methodology employed to conduct the study (e.g. cross-sectional, longitudinal, meta-analysis);
- g) *Sample type*- the method used to select participants for the research (e.g. convenience, purposive, snowball, etc.);
- h) *Sample size analyzed*- number of participants included in the data analysis;
- i) *Gender ratio of sample*- distribution of gender within the study sample (expressed as the percentage of female to male participants);
- j) *Study aim*- the primary objective of the research, defined by the authors of the study;
- k) *Instrument used for job satisfaction measurement*- tools employed to assess levels of job satisfaction among participants;
- l) *Predictors of job satisfaction*- variables examined in the study that are hypothesized to influence or predict levels of job satisfaction;
- m) *Key findings*- results drawn from the data analysis;
- n) *Suggestions for further research*- author's proposal for conducting future research in the field;
- o) *Limitations*- noticed weaknesses or constraints during the research which may impact the results.

Critical Appraisal of Individual Sources of Evidence

We used the Joanna Briggs Critical Appraisal Tool (CAT) (<https://jbi.global/critical-appraisal-tools>) to assess the methodological qualities of studies that were included in this

research. The checklist is comprised of 8 items with four possible answer options (Yes, No, Unclear, and Not Applicable), all of which serve as indicators for the risk of bias in the study. For all the items on the checklist, if a question regarding a certain aspect is answered with *No* we consider it a high risk of bias, while *Yes* indicates a low risk of bias. If a study has a high risk of bias, its results are considered unreliable. Items answered with *Unclear* indicate that there is no sufficient data for a certain aspect to determine if it meets the criteria or not, while items answered with *Not Applicable* means that the assessment criteria are not suitable for the examined study.

The checklist items:

- a) *Were the criteria for inclusion in the sample clearly defined?* - item regarding clearly defined inclusion and exclusion criteria developed prior to recruitment of the study participants. The criteria should be specified with all necessary information for the study;
- b) *Were the study subjects and the setting described in detail?* - checks if the authors provided a clear description of the population from which the study participants were recruited, including demographics, location, and time period;
- c) *Was the exposure measured in a valid and reliable way?* - the study should provide a clear description of the method used for measurement of exposure;
- d) *Were objective, standard criteria used for measurement of the condition?* - assesses if objective, standard criteria were used for measurement of the condition;
- e) *Were confounding factors identified?* - regarding any confounding factors (i.e. unidentified variables that could affect the research findings) that were identified and noted by the authors of the study;
- f) *Were strategies to deal with confounding factors stated?* – assesses what were the strategies to deal with identified confounding factors. However, this is not always possible and is more difficult for studies where behavioral, attitudinal, or lifestyle factors may impact results;
- g) *Were the outcomes measured in a valid and reliable way?* - verifies outcome assessment validity (if measurement tools were validated instruments) and objectivity of the way the measurement was conducted;
- h) *Was appropriate statistical analysis used?* - identifies whether appropriate statistical analysis was used for data analysis.

Summarizing the Results

The study results were grouped by the area of psychology the participants were employed in. We identified four major categories: *Educational psychology*, *Clinical*

psychology, *General psychology* and *Other*. The differentiation was done in a way that seeks to provide a comprehensive overview of predictors of job satisfaction across different fields of psychology. *Educational psychology*, as a category in this study, encompasses all the research measuring levels of job satisfaction of psychologists employed in various educational settings (e.g. schools and universities). The category *Clinical psychology* refers to articles that primarily measure levels of job satisfaction among psychologists working in hospitals, clinics, mental health centers, or private psychological counseling practices. The category *General psychology* emerged as a collection of articles that did not measure job satisfaction in a specific field of psychology but rather comprised a sample of psychologists working in various subfields. The articles which focused on specific fields of psychology that do not fall under the *Educational psychology* or *Clinical psychology* category were categorized as *Other*. This includes studies that measured job satisfaction among psychologists working in police departments, prisons (state and federal), human resources or those who are specialized in pediatric psychology. The differentiation between the categories *General psychology* and *Other* is that studies included in the *General psychology* category collected a combined sample of psychologists from various domains, whereas those in the category *Other* focused on a specific area of psychology but did not fall under any of our other categories that emerged.

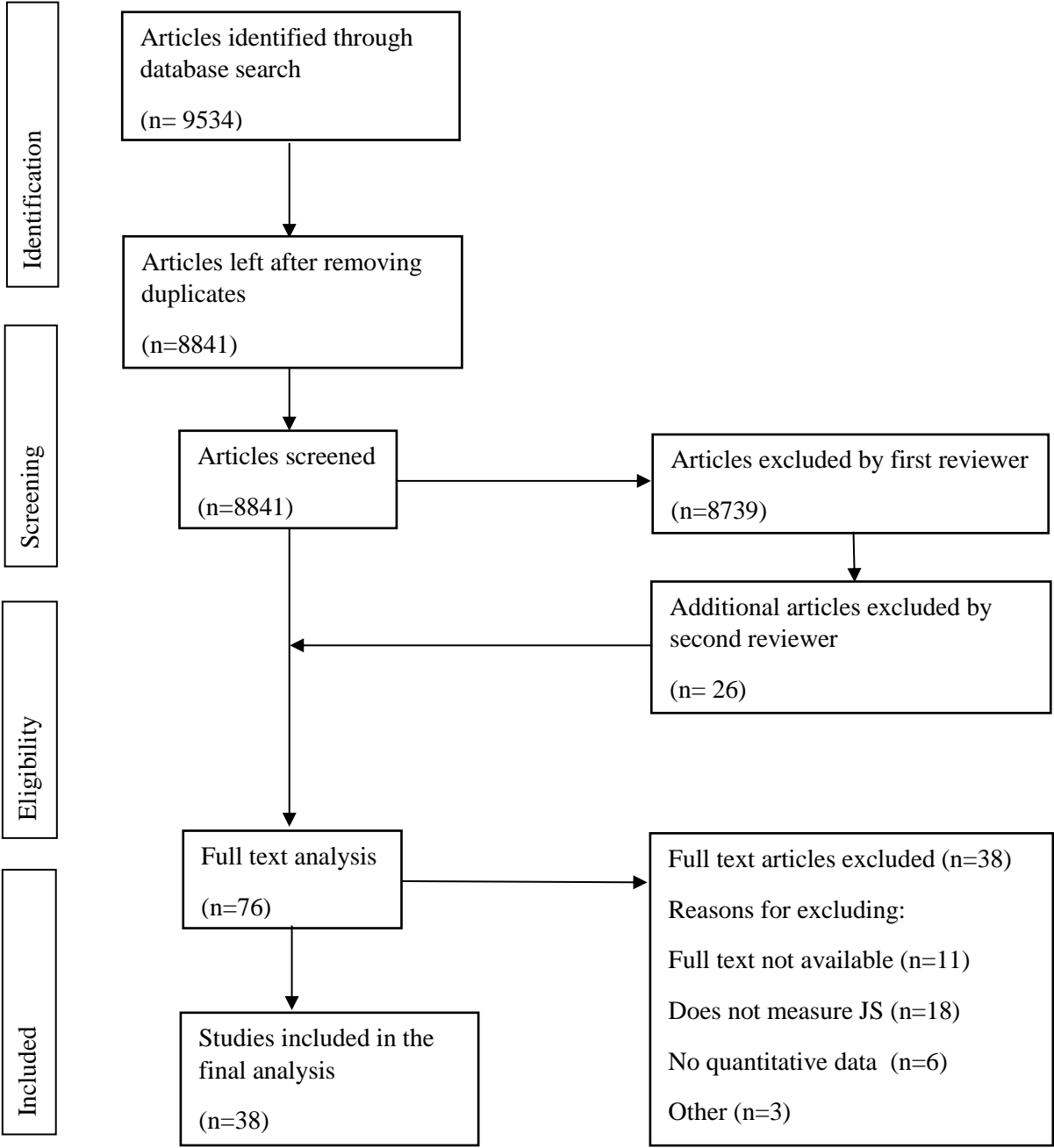
3. Results

Selection of Sources of Evidence

A search of bibliographic databases retrieved 9534 results (2201 from PubMed and 7333 from Web of Science) (Figure 1). After deduplication, 8841 articles were left for further screening (Figure 1). The initial screening which was done by the first reviewer (TV) resulted in 102 articles being eligible for full-text analysis. After the second reviewer (IB) screened the eligible articles, 76 were selected for full-text analysis. Articles that did not measure job satisfaction (JS) (n=18) or provided no quantitative data (n=6) were additionally removed during the full-text analysis. We did not manage to gain access to eleven articles and three articles were discarded for other reasons (lacking methodological information). This resulted in a final sample of 38 articles to be included in the study.

Figure 1

Flow chart of the literature review



Characteristics of Sources of Evidence

Of the 38 articles included in the study, 27 of them were done in the USA and the rest were from: South Africa (n=3) (Bester and Mouton, 2006; Donald and Bleekers, 2012; Pillay et al., 2012), Australia (n=2) (Burke et al., 2005; Thielking et al., 2006), Ireland (n=2) (Carr, 1995; Roncalli and Byrne; 2016), Belgium (De Witte and Lagrou, 1990), Czech Republic (Kavenska et al., 2013), England (Male & Male 2003), Israel (Raviv et al., 2002), and Sweden (Schele et al., 2021). The included articles were all published from 1959 to 2023 and all of them were published in English. Only six reported having board approval (Bocanegra et al., 2023; Hilliard et al., 2017; MacKain et al., 2010; Pillay et al., 2012; Schele et al., 2021; Young et al., 2020).

Design and Sample Characteristics

This literature scope includes a meta-analysis containing results from eight different articles, all of which were published between 1982 and 1999. All the articles were cross-sectional studies based on the same theoretical orientation (Minnesota Theory of Work Adjustment) and used The Modified Minnesota Satisfaction Questionnaire (m-MSQ) to measure job satisfaction (VanVoorhis and Levinson, 2006). Two longitudinal studies are also included in the scope (Walfish et al, 1991; Goodyear et al, 2008). The rest of the articles are all cross-sectional studies (n=35).

The studies varied in sample characteristics. The median number of participants in all included studies was 189 (IQR= 80-512). On average, among the studies, there were more female than male participants (Median F/M ratio=1.49, IQR= 0.88-3.05).

Instrument of Measurement

We analyzed which instruments were most frequently used in studies that were included in this research. To assess this, two evaluators made initial categories based on which the rest of the the data concerning the measurement of job satisfaction was classified into five categories:

One item measure- articles report using a single item measure to assess a construct (e.g. How satisfied are you with your current job?);

Minnesota Satisfaction Questionnaire- studies that used either the short form or a modified version of the scale;

Survey created for specific research- encompasses the articles in which authors created and applied their surveys, particularly for that research;

Non-validated multiple-item measures- articles that used multiple items to measure a particular construct, however, they have not undergone validation processes to ensure their reliability and validity;

Other validated measures- studies that used validated measures apart from the Minnesota Satisfaction Questionnaire (e.g. Job Diagnostic Survey)

The results show that the ways of assessing job satisfaction varied significantly across research. The most prevalent category was *One item measure*, followed by the *Minnesota Satisfaction Questionnaire* (Table 2). The next most prevalent category of instruments used to measure job satisfaction was the *Survey created for specific research* (Table 2). The least prevalent categories were *Non-validated multiple-item measures* and *Other validated measures* (Table 2).

Table 2

Categories of instruments used to measure job satisfaction

| Category | n (%) |
|--------------------------------------|--------------|
| One item measure | 17 (44.7) |
| Minnesota Satisfaction Questionnaire | 7 (18.4) |
| Survey created for specific research | 6 (15.8) |
| Non-validated multiple-item measure | 4 (10.5) |
| Other validated measures | 4 (10.5) |

Assessed Predictors of Job Satisfaction

We further analyzed which predictors of job satisfaction were the most frequently used in studies that were included. To assess this, we categorized the data concerning the variables used to predict job satisfaction in the studies. Two evaluators made initial categories on the first 5 studies, based on which the rest of the data was coded. The predictors in each study could have been coded under one or more of the given categories. From the analysis, 8 categories emerged:

Work environment and support- consists of predictors concerning the support system one has at work (e.g. colleagues and administration), resources they can work with (e.g. state funding for schools), and details of the environment they spend time in while working (e.g. office location);

Job role and responsibilities- refers to specific demands a position at work implies (e.g. working hours, supervising subordinates);

Psychological factors- entails all emotional states, moods, personality traits, and coping mechanisms that could have a positive or negative impact on a person's general well-being, performance, and therefore job satisfaction (e.g. time management, depression, anxiety, self-efficacy);

Demographics- entails key characteristics used for differentiation of people in a study sample (e.g. age, education, ethnicity, education level, etc.);

Career development and advancement- entails specific opportunities for progress in one's professional life;

Income- assesses one's socioeconomic status;

Opportunities to work with people- refers to aspects of the job that involve assessing and/or doing therapy with patients;

Other- predictors in this category do not fall under any mentioned category and therefore are categorized separately (e.g. theoretical orientation).

The overall most assessed predictor of job satisfaction was *Work environment and support*, followed by *Job role and responsibilities* (Table 3). The least frequently assessed were *Opportunities to work with people* and *Others* (Table 3). In the context of *Educational psychology*, variables that were most frequently used to predict job satisfaction were *Work environment and support* and *Job responsibilities* (Table 3). This is also true for the category *Other* (Table 3). For the category *Clinical psychology*, the most assessed predictor was *psychological factors*, followed by *Work environment and support*, *Job role and*

responsibilities, and *Demographics* (Table 3). For the category *General psychology*, the most frequently assessed predictor was *Work environment and support* while no articles report assessing predictors *Career development and advancement*, *Income*, *Opportunities to work with people*, or *Other* which were assessed for other areas of psychology (Table 3).

Table 3

Assessed predictors of job satisfaction

| Category | All | Educational | Clinical | General | Other |
|------------------------------------|------------|-------------|-----------|-----------|----------|
| | N (%) | n (%) | n (%) | n (%) | n (%) |
| Work environment and support | 25 (24.0) | 13 (24.07) | 3 (15.79) | 5 (45.45) | 4 (20.0) |
| Job role and responsibilities | 19 (18.27) | 11 (20.37) | 3 (15.79) | 1 (9.09) | 4 (20.0) |
| Psychological factors | 18 (17.31) | 7 (12.96) | 4 (21.05) | 4 (36.36) | 3 (15.0) |
| Demographics | 13 (12.50) | 7 (12.96) | 3 (15.79) | 1 (9.09) | 2 (10.0) |
| Career development and advancement | 11 (10.58) | 7 (12.96) | 1 (5.26) | 0 | 3 (15.0) |
| Income | 11 (10.58) | 6 (11.11) | 2 (10.53) | 0 | 3 (15.0) |
| Opportunities to work with people | 4 (3.85) | 2 (3.70) | 1 (5.26) | 0 | 1 (5.0) |
| Other | 3 (2.88) | 1 (1.85) | 2 (10.53) | 0 | 0 |

Key Findings

To assess which predictors were associated with job satisfaction among different areas of psychology from the studies that were included, we categorized the main findings of those studies. Two evaluators made initial categories on the first 5 studies, based on which the rest of the studies were coded. The findings from each study could have been coded under one or more of the given categories. From the analysis, 4 categories emerged:

Job characteristics- refers to specific demands and benefits a position at work implies (e.g. working hours);

Psychological factors- entails all emotional states, moods, personality traits, and coping mechanisms that could have a positive or negative impact on a person's general well-being, performance, and therefore job satisfaction (e.g. time management, depression, anxiety, self-efficacy);

Demographics- encompasses all key characteristics used for differentiation of people in a study sample (e.g. age, education, ethnicity, education level, etc.);

Work environment and support- consists of predictors concerning the support system one has at work (e.g. colleagues and administration), resources they can work with (e.g. state funding for schools), and details of the environment they spend time in while working (e.g. office location).

For all areas of psychology, the most prevalent predictor of job satisfaction was *Work environment and support* (Figure 2). Regarding the association of other predictors with job satisfaction, some differences were found across analyzed areas of psychology. Therefore, in the context of *Educational psychology*, predictors *Demographics* and *Job characteristics* were equally associated with job satisfaction while the predictor *Psychological factors* was the least prevalent (Figure 2). For *Clinical psychology*, apart from *Work environment and support*, other predictors were similarly prevalent (Figure 2). For *General psychology*, the second most prevalent predictor was *Psychological factors* whereas no demographic variables were found to predict job satisfaction (Figure 2). For the category *Other*, *Work environment and support* and *Job characteristics* were found to be the most prevalent predictors, whereas the least prevalent was *Psychological factors* (Figure 2).

Considering the direction of association between certain factors categorized into the above-mentioned categories and job satisfaction levels among psychological areas, the studies have reported somewhat similar results.

In the context of *Work environment and support* in educational psychology, studies have reported a positive relationship between communication with colleagues and superiors, as well as acceptance by teachers and students with psychologists' job satisfaction levels. On the other hand, office space, budget, and working in public schools have been shown to have a negative relationship with job satisfaction levels. Furthermore, for the *Demographic characteristics*, male sex and years of employment have been shown as positive predictors of job satisfaction. That is male educational psychologists who have been working for longer report higher levels of job satisfaction than their recently employed female colleagues. Moreover, for *Psychological factors*, the only predictor to be found significant was isolation, which has been shown to have a negative association with one's job satisfaction levels. Lastly, as for *Job characteristics*, the nature of work, salary, and role expansion have been reported to have a positive relationship with job satisfaction. On the other hand, time spent doing administrative work and increased technology use have been negatively associated with the levels of job satisfaction.

For clinical psychology, *Work environment and support* variables found to be positively associated with one's job satisfaction were working in private practice, support from colleagues and supervisors, and teamwork. A negative relationship was found between working in government institutions and job satisfaction. Furthermore, for *Psychological factors*, career-sustaining behaviors (work-life balance, reflecting on satisfying work experiences, and discussing work with family) had a positive relationship with job satisfaction levels. Lastly, in the context of *Job characteristics*, positive relationships with job satisfaction levels were found for direct work with clients, specific tasks that make up the job, and performing psychological assessments.

As for the general psychology studies, a positive relationship with job satisfaction was found with social support, and a negative with working in public sectors (*Work environment and support*). In terms of *Psychological factors* associated with job satisfaction, a positive relationship was found with psychological flexibility, self-efficacy, and health, whereas a negative relationship was reported with emotional demands, personal distress, and negative psycho-somatic symptoms. Regarding *Job characteristics*, a positive relationship was found between job security and job satisfaction, whereas a negative relationship was found between the number of hours worked and job satisfaction.

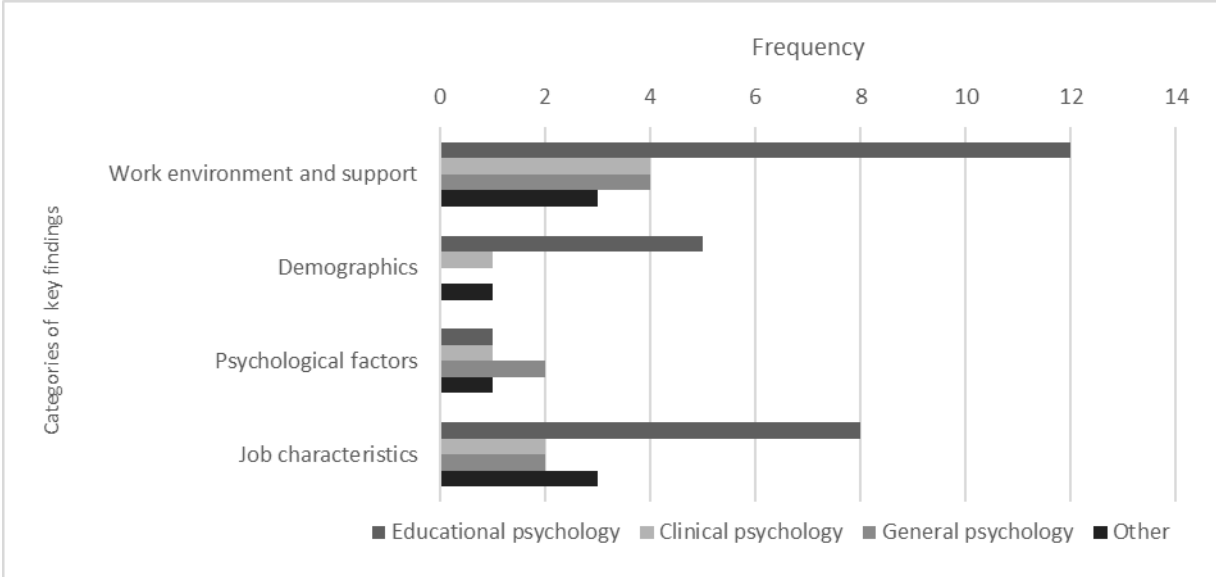
Lastly, in the category *Other*, for the association between job satisfaction and *Work environment and support*, a positive relationship was found in recognition, relationship with supervisor, safety, and working in federal prison (correctional psychology), and a negative relationship for working in state prisons, and number of inmates per facility. A positive

relationship with job satisfaction was also found for higher academic ranks compared to lower academic ranks (psychologists in academia) (*Demographic characteristics*). Furthermore, a positive relationship with job satisfaction was also reported for personally meaningful work (*Psychological factors*). Lastly, opportunity for advancement, autonomy, influence in decision-making, salary, and relationship with clients have all been found to have a positive relationship with job satisfaction (*Job characteristics*).

Additionally, it is important to note that, out of the 38 analyzed studies, a total of 7 studies did not find any significant associations between job satisfaction and any of the stated categories.

Figure 2

Categories of the key findings of all included studies (Total N=38)



Evidence from Studies with Validated Measures

From the studies that used validated instruments to measure job satisfaction (N=11), the most prevalent significant predictor of job satisfaction was found to be *Work environment and support* (N=8). In this category, relationships with a supervisor, membership in an organization, and teamwork were positively associated, whereas working in the public sector and training modifications were negatively associated with job satisfaction levels. The second most prevalent predictor was *Job characteristics* (N=3). In this category, a positive relationship was found between job satisfaction and role expansion, and with the nature of work, whereas a negative relationship was shown for time doing administrative work and increased technology use. Categories *Demographics* and *Psychological factors* were found to be the least prevalent predictors of job satisfaction across analyzed studies that utilized validated instruments (N=2). Psychological flexibility, self-efficacy, and health were shown as positive, and isolation and emotional demands as negative predictors of job satisfaction (*Psychological factors*). Furthermore, membership in psychological organizations was also found to be a positive predictor regarding (*Demographics* category). Lastly, it is important to note that 2 out of 11 studies that used validated measures did not find any significance between assessed predictors and job satisfaction.

Suggestions and Limitations

We analyzed which suggestions for further research were most frequently noted by the authors of studies that were included in this research. The suggestions from each study could have been coded under one or more of the given categories. We classified the data concerning the suggestions into five categories:

Did not specify- refers to all the articles in which the authors did not specify any suggestions for further research;

More specific information- which authors of the studies expressed a need for more targeted research and analysis of variables that might be linked to job satisfaction;

Expanding existing research- encompasses suggestions for broadening the sample size and/or expanding the location where the research is conducted;

Investigate sources of dissatisfaction- entails suggestions for researching predictors of job dissatisfaction;

Monitor changes in the field- authors highlight the importance of continued monitoring of changes in the psychological field.

The most prevalent category was *Did not specify*, followed by the categories *More specific information* and *Expanding existing research* (Table 4). The least prevalent categories were *Investigating sources of dissatisfaction* and *Monitor changes in the field* (Table 4).

Table 4

Suggestions for further research in the included studies (Total N=38)

| Category | n (%) |
|--|--------------|
| Did not specify | 15 (39.5) |
| More specific information | 11 (28.9) |
| Expanding existing research | 8 (21.0) |
| Investigate sources of dissatisfaction | 3 (7.9) |
| Monitor changes in the field | 2 (5.3) |

We further analyzed which research limitations were most frequently stated by the authors of studies that were included in this research. The limitations from each study could have been coded under one or more of the given categories. The categories that emerged were the following:

Did not specify- studies that did not specify any kind of limitation;

Generalizability and representativeness- the external validity and degree to which the sample accurately represents the larger population were limited;

Methodology and research design- entails specific research design constraints or gaps in the applied methodology;

Sample size and response rate- consists of limitations regarding the number of participants and response rate of surveys applied in the research;

Different types of bias- studies that stated the threat of various types of biases (e.g. response bias, sampling bias);

Other- studies that stated limitations that did not fit into any of the given categories (e.g. funding).

Our results show that the most prevalent category of limitations was the *Did not specify* category, meaning that the authors did not note any limitations regarding their research. (Table 5). Following were the categories *Generalizability and representativeness*, *Methodology and research design*, and *Sample size and response rate* (Table 5). The least prevalent categories were *Different types of bias* and *Other* (Table 5).

Table 5

Categories of the limitations stated in the included studies (Total N=38)

| Category | n (%) |
|---|--------------|
| Did not specify | 16 (42.1) |
| Generalizability and representativeness | 15 (39.5) |
| Methodology and research design | 10 (26.3) |
| Sample size and response rate | 10 (26.3) |
| Different types of bias | 7 (18.4) |
| Other | 3 (7.9) |

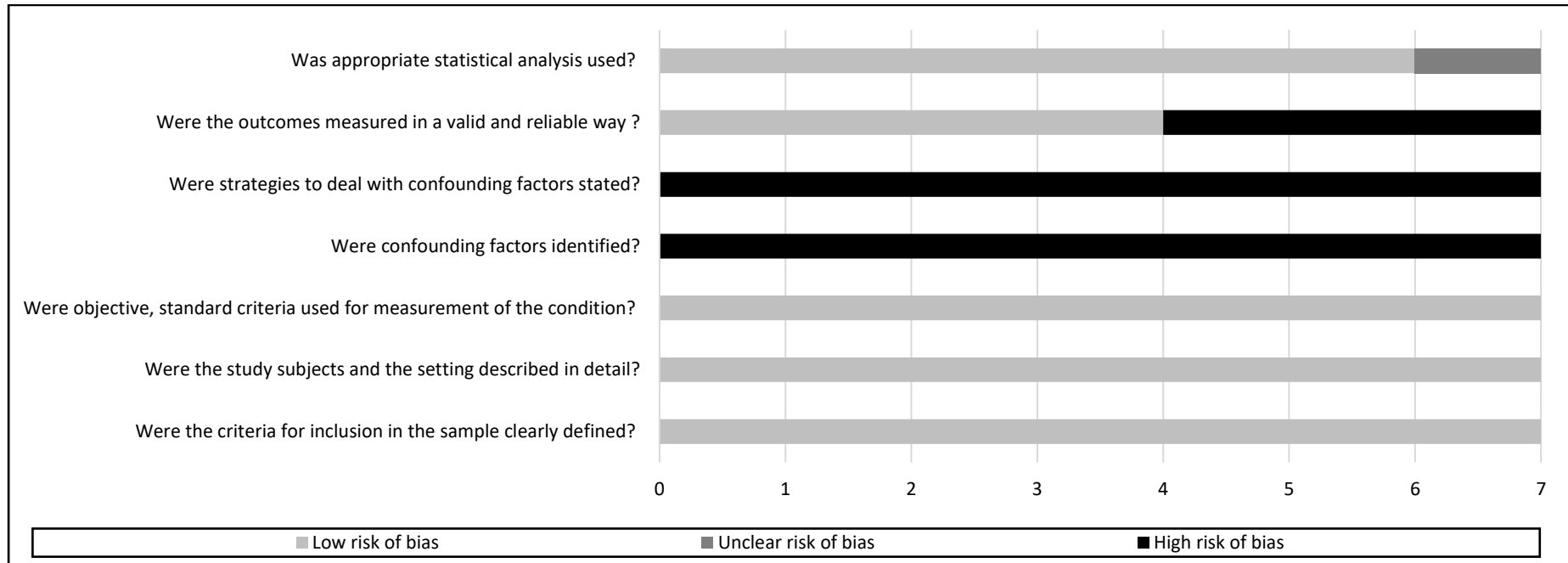
Critical Appraisal of Sources of Evidence

We employed the Joanna Briggs Institute (JBI) Critical Appraisal Tool to evaluate the methodological quality of studies included in our research. This tool assesses various aspects of study quality and risk of bias using eight criteria: the use of appropriate statistical analysis, the validity and reliability of outcome measures, strategies for dealing with confounding factors, identification of confounding factors, the use of objective and standard criteria for measurement, the detailed description of study subjects and setting, and the clarity of inclusion criteria for the sample. The eighth item of the measurement was related to the method used for the measurement of exposure, and, since we did not have any exposure in our study, we did not use it for the critical assessment of the studies analyzed.

The results of our critical appraisal are illustrated in Figure 3. Each criterion was assessed across the reviewed studies, with findings categorized as *low risk of bias* (answer *yes*), *unclear risk of bias* (answer *unclear*), and *high risk of bias* (answer *no*). Regarding the statistical analysis used, all studies used an appropriate statistical analysis, except for one which did not provide sufficient details to confirm the appropriateness of the statistical methods used (Pillay, et.al., 2012). As for the outcome measurement, the majority of studies measured outcomes in a valid and reliable way, however, 10 of the included studies failed to address or report the validity and reliability of their outcome measures (Wright & Gutkin, 1981; Walfish et al., 1991; Brown et al., 1998; Raviv et al., 2002; Male and Male, 2003; Goodyear et al., 2008; Pillay et al., 2012; Donald and Bleekers, 2012; Hilliard et al., 2017; Bocanegra et al., 2023). For the strategies to deal with confounding factors, none of the studies stated them, indicating a high risk of bias in this area. Similarly, for the identification of confounding factors, none of the studies identified them, further contributing to a high risk of bias. Conversely, all the studies used objective, standard criteria for measurement of the condition being studied, and provided a detailed description of study subjects and settings, indicating transparency and thorough reporting. Lastly, all studies included clearly defined their criteria for inclusion in the sample.

Figure 3

Critical Appraisal of Sources of Evidence



4. Discussion

Our research aimed to identify which variables predict psychologists' job satisfaction the most, across different fields of psychology. We also sought to determine which predictors and instruments were used most frequently for the assessment of job satisfaction among psychologists. Studies included in our review were predominantly cross-sectional, apart from two longitudinal studies and one meta-analysis. The results show that the instruments for assessing job satisfaction varied significantly across research. The most prevalent were one-item measures, meaning that in most cases, the researcher assessed job satisfaction with a single question (for example, "How satisfied are you with your job on a scale from 1 to 7?"), which is a non-validated measure. Conversely, the least prevalent were, apart from the Minnesota Satisfaction Questionnaire, other validated measures. The most assessed predictor was work environment and support across all psychological domains. This means that the authors of the analyzed articles most often hypothesized that these aspects would be significant predictors of psychologist job satisfaction. Even though psychologists, in theory, spend a lot of time working with people, the opportunity to do so at work was one of the least assessed predictors for their overall job satisfaction, along with their monetary income.

Our results show that the most prevalent predictor of job satisfaction was work environment and support, for all categories of psychological fields. Factors such as relationships with colleagues and supervisors, working in the private sector compared to public sector, and teamwork have been shown as positive predictors of job satisfaction. That is psychologists who have better relationships with colleagues, those who work in the private sector, and those whose job encompasses working with others to complete a certain job requirement, are at the same time more likely to report higher levels of job satisfaction. Whereas a negative association with job satisfaction has been found for factors such as office space, working in public sectors, and overcrowded work facilities. These findings indicate that the support system one has at work (e.g. colleagues and administration), resources they can work with (e.g. state funding for schools), and details of the environment they spend time in while working (e.g. office location) are the most prevalent predictor for one's job satisfaction, regardless of their specific domain. This is in line with previous research, as it is reported by psychologists from different backgrounds that a supportive work environment, a good relationship with one's supervisor, and affiliation with a certain organization are often reasons for greater job satisfaction, despite possible other shortcomings of the career (Boothby and Clements, 2002; Sweet et al., 2015; Wright and Gutkin, 1981). Our findings could further

inform the organizations in terms of which aspects of one's job are the most important for creating a supportive work environment which in turn leads employees to have higher satisfaction regarding their jobs. For instance, organizations could implement interventions for improving the supervisor-employee relationship, since a good relationship between the two has been associated with higher job satisfaction levels by several studies (Wright & Gutkin, 1981). This is important since it could ultimately lead to higher retention and lower turnover rates, as well as create a more productive work climate (Griffeth et al., 2000). The study done by Niskala et al. (2020) showed that workplace interventions enhance employee well-being, job satisfaction, and productivity, making them an important part of organizational strategies. They also report that interventions can reduce stress, prevent burnout, and improve overall mental health, leading to a healthier work environment. Additionally, a systematic review and meta-analysis were done to identify effective interventions for improving nurses' job satisfaction and found that educational interventions, such as workshops, training sessions, and professional identity development programs, significantly enhanced job satisfaction (Niskala et al., 2020). Future studies could go into a more in-depth analysis of the interaction of various elements that shape work environments and how they are associated with the job satisfaction of psychologists specifically. A better understanding of work environments could lead to empirically guided changes and interventions which would ultimately lead to higher levels of job satisfaction.

Apart from psychological factors, demographics were found to be one of the least prevalent predictors of job satisfaction across all fields of psychology. Nevertheless, findings suggest that certain demographic variables are associated with job satisfaction. There has been a positive relationship reported between job satisfaction and male sex, higher academic ranks, as well as years of employment. That is, male psychologists have reported higher levels of job satisfaction compared to females, those with higher academic ranks are shown to have higher job satisfaction, and those who held the position longer have shown greater job satisfaction levels compared to coworkers who were newly employed. On the other hand, in studies that did not focus on a certain domain of work but rather examined samples of psychologists from different fields, we found that no demographic variables predicted job satisfaction. For studies regarding specifically correctional, police, industrial, and pediatric psychologists, the results of our analysis also show that demographics are one of the least prevalent predictors. The study by Salyers et al. (2013) reported that various demographic factors such as age, gender, and years of experience are significant predictors of job satisfaction among mental health professionals, including psychologists. However, literature regarding this topic is limited and the association between job satisfaction and demographic variables should be further studied. Based on our

results, a proposition for future studies would be detailed explorations of the influence of specific demographic variables (age, gender, education level, etc.) on job satisfaction. This should especially be employed among educational psychologists, where we found that demographic variables are one of the most prevalent predictors of job satisfaction. Identifying specific satisfaction trends regarding the work of psychologists in the educational field could lead to more targeted strategies for job satisfaction improvement.

Among all analyzed fields, job characteristics were found to be most prevalent in the context of educational psychology and least prevalent in clinical and general psychology. These results indicate that job characteristics, more specifically, demands and benefits a position at work implies (e.g. working hours) vary across different jobs within the field of psychology, therefore making it a significant predictor in some domains, but not in others. Factors that have been positively associated with job satisfaction include role expansion, autonomy, recognition, as well as influence in decision-making. These indicate that psychologists who have higher opportunities for advancement in their work, those who report a higher capacity to make informed decisions, professionals who receive higher levels of recognition, and those who report a greater influence in decision-making, are all at the same time more satisfied with their job. Our results are not in line with existing research, given that studies report that job satisfaction of clinical psychologists is predicted by income level, working hours, and job responsibilities (Walfish et al., 1991). It is important to note that the association between job characteristics and job satisfaction has not been thoroughly researched in the context of different psychological domains. Addressing unique demands and benefits within the field of psychology could help create organizational strategies for improving overall job satisfaction. That is, identifying job aspects that are characteristic of different psychological domains and focusing on both their strengths and weaknesses, as well as how are they associated with the levels of job satisfaction, could further inform the development and customization of intervention strategies suitable for specific psychological areas.

Psychological factors which entail all emotional states, moods, personality traits, and coping mechanisms that could impact a person's general well-being, performance, and job satisfaction (e.g. time management, depression, anxiety, self-efficacy) were found to have approximately the same prevalence for predicting job satisfaction across all analyzed fields of psychology. For instance, a positive relationship was found between job satisfaction and psychological flexibility and career-sustaining behaviors (work-life balance, reflecting on satisfying work experiences, discussing work with family), meaning that psychologists who report higher levels of these constructs are also more likely to exhibit higher levels of job

satisfaction. On the other hand, factors such as emotional demands, personal distress, as well as negative psychosomatic symptoms have all been negatively associated with job satisfaction. That is, psychologists who experience these psychological burdens due to their occupation also report lower levels of job satisfaction. Existing literature shows that the assessment of psychological factors that might impact job satisfaction is most common among clinical psychologists, compared to all other psychological fields. However, our analysis demonstrates that there are no differences regarding the variable psychological factors predicting job satisfaction among any of the analyzed fields. Future studies could explore the specific ways in which psychological factors are associated with job satisfaction, aiming to represent multiple fields of psychology and not limiting the research to clinical settings.

The interpretation of results should consider several limitations. To obtain a data sample for our research only two online bibliographic databases were searched, that is Web of Science and PubMed. We did not search PsychINFO, which has a focus on research specifically done in the psychological and closely related fields, therefore our research is limited regarding the obtained scope. However, PubMed is widely regarded as a valuable search system for various scientific disciplines because of its robust coverage of peer-reviewed content and capacity for efficient data handling (Gusenbauer & Haddaway, 2020). Furthermore, research shows that including Web of Science in database search combinations results in higher recall rates, enhancing the comprehensiveness of the obtained scope (Bramer et al., 2017). Nevertheless, given that psychINFO was not searched, there is a possibility that there was one or multiple articles eligible for our research that were not included in the scope. The study was also exposed to self-report bias given that self-report measures were used to assess job satisfaction of psychologists in the analyzed samples. Even though two widely known and trusted literature databases were searched to obtain an adequate scope, there is a possibility of publication bias, meaning that there might be a study fully eligible for our research that did not make it into our final scope due to various publishing reasons. Another limitation of our study is that constructs closely related to job satisfaction, such as burnout and turnover, were not included in the analysis. Given that the literature shows strong interconnections of those constructs, all of them should be considered in order to get a better understanding of workplace dynamics and to develop strategies that enhance employee well-being. Furthermore, all the included studies were quantitative research designs, meaning that our study might lack contextual understanding, methodological flexibility, and participant perspective.

Given the limitations of our study, it's important to consider previous research on job satisfaction among psychologists, which has highlighted alarming rates of burnout and

psychological distress (e.g., Simionato & Simpson, 2018). While some studies have identified factors such as work setting differences and gender being related to emotional exhaustion (Rupert and Morgan, 2005), they often lack specific details on contributory factors. High job satisfaction in educational psychology has been linked to positive coworker relationships and opportunities for independence and service (VanVoorhis & Levinson, 2006). However, these predictors may not apply universally across other fields. Understanding the unique predictors of job satisfaction in clinical, correctional, and other psychology specialties is crucial, as these areas often report only moderate satisfaction levels (Boothby & Clements, 2002; Sousa & Coleta, 2015).

Considering that, to the best of our knowledge, there is no literature scope on this topic, we feel as if there was a great need for the synthesis of available research for multiple reasons. Firstly, a comprehensive literature scope provides great insight into possible literature gaps that may have not been researched to their full extent yet by establishing the lack of sufficient, or simply lack of any data on a specific topic and providing a precise direction for future research. Our data shows that there is much more research done in the educational field of psychology than any other compared, even though educational psychologists demonstrate high levels of job satisfaction, meaning that there is a need for more studies to be done on other fields of psychology, especially because they demonstrate lower levels of satisfaction, which should be dealt with in the future. Secondly, our research could be used in the practical sense of informing organizational policies and tailoring support programs for psychologists given that we analyzed specific predictors for job satisfaction across multiple domains of psychology. This could, in turn, impact recruitment and retention, especially in domains that are experiencing higher turnover rates. Along with that, positive and carefully aimed changes in the field could potentially lead to enhancing the professional development of psychologists, which would not only benefit the workers and their organizations but also the clients they work with.

Our findings emphasize the specific conditions and environments in which psychologists expressed higher levels of satisfaction with their jobs across different fields of work. Even though psychologists' job satisfaction has been a thoroughly researched construct, there is a lack of agreement on which factors are associated with job satisfaction for different psychological domains, as well as which ones to use to predict psychologists' job satisfaction. Our study has shown that, across all fields of psychology, job satisfaction levels are most frequently predicted with variables concerning work environment and support. That is, as psychologists' communication with and integration among colleagues and superiors is better, they are more likely to be satisfied with their jobs. Conversely, shifts in the work environment,

such as increases in technology use and training modifications, as well as workplaces exposed to a higher number of clients have been associated with lower levels of job satisfaction. Furthermore, in the context of all psychological domains, except for clinical psychology, factors related to work environment and support have been most frequently used to predict job satisfaction. In studies that focused on clinical psychologists, the most used factors to predict job satisfaction levels have been those related to psychological factors. These encompass personal aspects such as psychological flexibility, self-efficacy, career-sustaining behaviors, and emotional demands. Additionally, considering the instruments used to measure job satisfaction, there is a lack of agreement between studies on which aspects should be evaluated in which contexts. Our study has shown a variability in instruments used to measure job satisfaction in different contexts. Using different scales to measure job satisfaction between studies can result in inconsistent findings, reduced validity, and difficulties in comparing and generalizing results across research. Also, a great number of articles demonstrated using non-validated measures which should be replaced in the future with reliable, validated measures, given the scientific progress psychology has made over time. Addressing the specific factors that influence job satisfaction across various fields of psychology is important for fostering a supportive and fulfilling work environment, thereby promoting both professional growth and enhancing the job satisfaction levels of psychologists. Additionally, our findings highlight the critical need for standardized, validated measures of job satisfaction tailored to specific psychological domains to better the consistency and applicability of future research outcomes.

5. Conclusion

This study highlights the need for research on job satisfaction among psychologists in the context of different psychological subfields. Our results demonstrate that the most prevalent predictors of job satisfaction are those related to work environment and support, for all psychological domains. However, differences were found regarding the prevalence of other predictors across fields, which should be further studied. Lastly, given that less than a third of analyzed studies used some form of validated measures for assessing job satisfaction, future studies should focus on determining standardized, validated instruments for measuring job satisfaction.

6. Abstract

A scoping review was conducted to investigate which variables predict psychologists' job satisfaction the most, across different fields of psychology. The aim was also to determine which predictors and instruments were used most frequently for the assessment of job satisfaction among psychologists. Data search for inclusion in the scoping review was limited to quantitative empirical studies that involved the measurement of job satisfaction of practicing psychologists. Literature searches were made in November of 2023. The information search was systematically performed from the inception of electronic bibliographic databases Web of Science (WoS) and PubMed. All retrieved articles were exported to the Zotero reference manager and deduplicated, followed by screening performed by two independent reviewers, which resulted in a total of 38 articles being eligible for our analysis. A comprehensive data extraction and assessment tool was developed in Excel to assess the characteristics of the included studies. We used the Joanna Briggs Critical Appraisal Tool (CAT) (<https://jbi.global/critical-appraisal-tools>) to assess the methodological qualities of studies that were included in this research. Results of this study have shown that, across all fields of psychology, job satisfaction levels are most frequently predicted with variables concerning work environment and support. Results imply that psychologists' better communication with and integration among colleagues and superiors was associated with higher satisfaction with their jobs. Conversely, shifts in the work environment, such as increases in technology use and training modifications, as well as workplaces exposed to a higher number of clients have been associated with lower levels of job satisfaction. Furthermore, in the context of all psychological domains, except for clinical psychology, factors related to work environment and support have been most frequently used to assess levels of job satisfaction. In studies that focused on clinical psychologists, the most used factors for assessment of satisfaction have been those related to psychological factors, which encompass personal aspects such as psychological flexibility, self-efficacy, career-sustaining behaviors, and emotional demands. Additionally, our study reports a high diversity of instruments used to measure job satisfaction in different contexts, with a great number of articles reporting using non-validated measures. Our findings highlight the need for standardized, validated measures of job satisfaction which are tailored to specific psychological domains, to better the consistency and applicability of future research outcomes.

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Supplement

Table A

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

| SECTION | ITEM | PRISMA-ScR CHECKLIST ITEM | REPORTED ON PAGE # |
|---------------------------|------|---|--------------------|
| TITLE | | | |
| Title | 1 | Identify the report as a scoping review. | 1 |
| ABSTRACT | | | |
| Structured summary | 2 | Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives. | 34 |
| INTRODUCTION | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach. | 5-6 |
| Objectives | 4 | Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives. | 7 |
| METHODS | | | |
| Protocol and registration | 5 | Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number. | 8 |
| Eligibility criteria | 6 | Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale. | 8 |

| SECTION | ITEM | PRISMA-ScR CHECKLIST ITEM | REPORTED ON PAGE # |
|---|------|--|--------------------|
| Information sources* | 7 | Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed. | 8 |
| Search | 8 | Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated. | 9 |
| Selection of sources of evidence ¹ | 9 | State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review. | 8 |
| Data charting process ² | 10 | Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators. | 10 |
| Data items | 11 | List and define all variables for which data were sought and any assumptions and simplifications made. | 10 |
| Critical appraisal of individual sources of evidence ³ | 12 | If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate). | 10-11 |
| Synthesis of results | 13 | Describe the methods of handling and summarizing the data that were charted. | 11-12 |
| RESULTS | | | |
| Selection of sources of evidence | 14 | Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram. | 14 |
| Characteristics of sources of evidence | 15 | For each source of evidence, present characteristics for which data were charted and provide the citations. | 15 |

| SECTION | ITEM | PRISMA-ScR CHECKLIST ITEM | REPORTED ON PAGE # |
|---|------|---|---------------------|
| Critical appraisal within sources of evidence | 16 | If done, present data on critical appraisal of included sources of evidence (see item 12). | 25-26 |
| Results of individual sources of evidence | 17 | For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives. | 46-60 47 |
| Synthesis of results | 18 | Summarize and/or present the charting results as they relate to the review questions and objectives. | 17-24 3 |
| DISCUSSION | | | |
| Summary of evidence | 19 | Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups. | 27 |
| Limitations | 20 | Discuss the limitations of the scoping review process. | 30 |
| Conclusions | 21 | Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps. | 32 |
| FUNDING | | | |
| Funding | 22 | Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review. | / |

JBIG = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

Table B*Main components of the extraction tool table with all included studies (N=38)*

| Study | Author | Design | Area of psychology | Setting | Sample size | Measure | Findings |
|---|--------------------------|-----------------|---------------------------|----------------|--------------------|----------------------|--|
| Retention and Job Satisfaction of School Psychologists | Young et al. (2020) | Cross-sectional | Educational psychology | USA | 134 | 5-point Likert scale | The findings emphasize the importance of both intrinsic motivators (feeling valued and making a difference) as well as extrinsic factors (supportive work environment and opportunities for collaboration) in influencing the job satisfaction levels of school psychologists. |
| School Psychologists' Job Satisfaction and Discrepancies Between Actual and Desired Work Functions | Wright and Gutkin (1981) | Cross-sectional | Educational psychology | USA | 60 | 5-point Likert scale | Workload/available time, effective communication among those with whom you have frequent contact, relationship with immediate superior and power to effect change or results are statistically significant predictors of job satisfaction. |

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|--|--|-----------------|------------------------|-----|------|--|---|
| School Psychologists' Job Satisfaction - A 22-year Perspective in the USA | Worrell et al., (2006) | Cross-sectional | Educational psychology | USA | 234 | Modified version of the Minnesota Satisfaction Questionnaire | Intent to remain in position and Supervisor certification were statistically significant predictors for job satisfaction. |
| Gender and School Psychology- Issues, Questions, and Answers | Marilyn S. Wilson & Daniel J. Reschly (1995) | Cross-sectional | Educational psychology | USA | 1089 | 25 item measure of job satisfaction was developed from the content of the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969) | Females reported more satisfaction with their work compared to males. There were no significant differences by gender in satisfaction with pay, promotion, or supervision. Overall job satisfaction did not differ between males and females. |
| A Longitudinal Study of the Career Satisfaction of Clinical Psychologists | Walfish et al., (1991) | Longitudinal | Clinical psychology | USA | 87 | 6-point Likert scale | There is no statistically significant difference on current job satisfaction between those participants who would |

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|---|--------------------------------|-----------------|------------------------|-----------|------|---|---|
| | | | | | | | and who wouldn't choose psychology again as a career. |
| Job Satisfaction among School Psychologists: A Meta-analysis | VanVoorhis and Levinson (2006) | Meta-analysis | Educational psychology | USA | 2116 | All included studies used the Modified Minnesota Satisfaction Questionnaire (m-MSQ) | Three out of five researches demonstrated a positive association between overall job satisfaction and professional membership in a state school psychology organization. The four studies that investigated the relationship between role expansion and job satisfaction all reported significant positive association. |
| Supervision and Satisfaction among School Psychologists - An Empirical study of Professionals in Victoria, Australia | Thielking et al., (2006) | Cross-sectional | Educational psychology | Australia | 81 | 5-point Likert scale | Although school psychologists reported that they were generally satisfied with the nature of activities that make up their role, those in the Government school sector reported less satisfaction relative to those working in Catholic and Independent schools. |
| The American Academy of Clinical Neuropsychology, | Sweet et al., (2015) | Cross-sectional | Clinical psychology | USA | 1577 | One-item measure | significant effect of general work setting for job satisfaction was found, with private practice significantly |

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|--|----------------------|-----------------|--------------------|--------|-----|---|---|
| National Academy of Neuropsychology, and Society for Clinical Neuropsychology (APA Division 40) 2015 TCN Professional Practice and 'Salary Survey': Professional Practices, Beliefs, and Incomes of U.S. Neuropsychologists | | | | | | | higher than both institution and combined institution/private practice. Respondents without a neuropsychologist professional identity produced what appear at face value to be the lowest income and job satisfaction ratings. |
| Correctional Psychologist Burnout, Job Satisfaction, and Life Satisfaction | Senter et al. (2010) | Cross-sectional | General psychology | USA | 211 | The Minnesota Satisfaction Questionnaire-Short Form | Psychologists in correctional settings of work and public psychiatric hospitals reported less job satisfaction than counseling center psychologists. |
| Self-Efficacy, Psychological Flexibility, and Basic Needs Satisfaction Make a Difference: Recently Graduated Psychologists at Increased or Decreased | Schele et al. (2021) | Cross-sectional | General psychology | Sweden | 532 | Swedish version of the Copenhagen Psychosocial Questionnaire – second version | Psychological flexibility, self-efficacy, competence, readiness, autonomy, transition 1 (to training position), transition 2 (to licensed position), influence at work, social support, social community at work, perceived health, life satisfaction were positively |

| | | | | | | | |
|--|----------------------------|-----------------|---------------------|---------|-----|--|--|
| Risk for Future Health Issues | | | | | | | <p>correlated with job satisfaction. Emotional demands were negatively correlated with job satisfaction. All correlations were statistically significant.</p> |
| Predictors of Career Satisfaction Among Practicing Psychologists | Rupert et al., (2012) | Cross-sectional | Clinical psychology | USA | 595 | 7-point Likert scale | <p>Significant predictors are: Percentage of direct pay clients, Control, and three of the subscales of Career- sustaining behaviours (Work-life balance, Reflecting on satisfying work experiences, Discussing work with family)</p> |
| Relationships at Work, Burnout and Job Satisfaction: A study on Irish psychologists | Roncalli and Byrne, (2016) | Cross-sectional | Clinical psychology | Ireland | 77 | Slightly modified short form of the Minnesota Satisfaction Questionnaire | <p>Liaison with one's line manager and supervisor, and the praise received, emerged as significant factors associated with JS. To a lesser degree, the perceived level of teamwork also emerged to be positively related to the level of JS.</p> |

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|---|------------------------------|-----------------|------------------------|--------|------|-----------------------|---|
| School Psychology Practitioners and Faculty - 1986 to 1991-92 – Trends in Demographics, Roles, Satisfaction, and System Reform | Reschly and Wilson, (1995) | Cross-sectional | Educational psychology | USA | 623 | JDI, JSS | Overall, faculty were more satisfied than practitioners with their jobs. The sources of greater faculty satisfaction were promotion, nature of the work, and supervision. |
| The Israeli School Psychologist - A Professional Profile | Raviv et al., (2002) | Cross-sectional | Educational psychology | Israel | 1113 | 10-point Likert scale | General job satisfaction was higher for men than women. Higher satisfaction was also found for senior experts compared to other expertise groups. |
| Job Satisfaction, Burnout, and Perceived Effectiveness of "In-house" versus Traditional School Psychologists | Proctor and Steadman, (2003) | Cross-sectional | Educational psychology | USA | 63 | 5-point Likert scale | Although the two groups differed on the measures of job satisfaction, the mean item scores for both demonstrated that neither group is really dissatisfied with their job. 6 of the 15 job satisfaction items demonstrated significance, all in favor of the in-house group of psychologists (job diversity items, caseload, others' familiarity with the school psychologist, and integration into school activities). |

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|---|------------------------|-----------------|------------------------|--------------|-----|---|---|
| Experiences of Clinical Psychologists Working in Public Health Service Facilities | Pillay et al., (2012) | Cross-sectional | Clinical psychology | South Africa | 95 | 5-point Likert scale | Results suggest that 61.1% of respondents were satisfied with their clinical work, while 33.7% felt unsupported in their work context. |
| Workload, Job Satisfaction and Perceptions of Role Preparation of Principal Educational Psychologists in England | Male and Male, (2003) | Cross-sectional | Educational psychology | England | 112 | Specific survey created for the research (4-point Likert scale) | Results indicated that PEPs have a generally positive attitude to the profession and express overall job satisfaction. However, they expressed dissatisfaction with time constraints regarding administration, and find the job stressful. |
| Job Satisfaction among Psychologists Working in State Prisons | MacKain et al., (2010) | Cross-sectional | Other | USA | 72 | 5-point Likert scale | Safety, salary, relationships with coworkers, and relationships with inmates failed to correlate significantly with overall job satisfaction, whereas all other variables were found to be significant (Opportunity for advancement, Autonomy, Recognition, Appropriate level of responsibility, Job security, Competent supervision, Relationship with supervisor, |

| | | | | | | | |
|--|--------------------------|-----------------|------------------------|----------------|------|--|--|
| | | | | | | | Achievement or success in job, Status/prestige of job, Professional atmosphere, Clear definition of roles, Personally meaningful work, Cooperation among staff, Access to/influence on decision making) |
| School psychology in the Czech Republic: Development, status and practice | Kavenska et al., (2013) | Cross-sectional | Educational psychology | Czech republic | 63 | Custom-developed questionnaire | School psychologists job satisfaction is positively correlated with their acceptance by teachers, by school management and by students. |
| Status, Job-Satisfaction, and Factors of Job-Satisfaction of State Institution and Clinic Psychologists | Jacobson et al., (1959) | Cross-sectional | General psychology | USA | 80 | 5 Likert type items with 3 to 5 alternatives | State institution psychologists have lower status and job satisfaction than clinic psychologists. Status expectancies of clinic psychologists are directly related to job satisfaction and that for the institution psychologists, the relationship was inverse. |
| Regional Differences in School Psychology Practice | Hosp and Reschly, (2002) | Cross-sectional | Educational psychology | USA | 1056 | 5-point Likert type scale | Overall school psychologists were very satisfied with their colleagues and their work and generally dissatisfied with the potential for promotion. Satisfaction |

| | | | | | | | |
|--|--------------------------|-----------------|------------------------|-----|-----|---------------------------|--|
| | | | | | | | with pay and with supervisor varied between regions. |
| Psychologists in Medical Schools - Professional Issues for the Future: How are Rank and Tenure Associated with Productivity and Satisfaction? | Holden and Black, (1996) | Cross-sectional | Educational psychology | USA | 293 | 5-point Likert type scale | Tenure-track faculty reported higher levels of satisfaction than non-tenure-track faculty. Senior level faculty were more satisfied than junior level faculty. Non-tenure-track full professors were less satisfied than tenure-track full professors. |
| Pediatric Psychologists' Career Satisfaction: 2015 Society of Pediatric Psychology Workforce Survey Results | Hilliard et al., (2017) | Cross-sectional | Other | USA | 336 | 4-point Likert type scale | Participants with 9- or 10-month appointments had significantly higher total satisfaction than those with 12-month appointments (pediatric psychologists). Those whose employment roles were primarily research reported significantly higher total satisfaction than those whose roles were primarily clinical . Those in higher academic ranks had significantly higher overall satisfaction than those in lower ranks. Participant ratings of total |

| | | | | | | | |
|--|-------------------------|-----------------|---------------------|-----|-----|---------------------------|---|
| | | | | | | | satisfaction did not significantly differ across gender, employment setting, number of positions or years since degree. |
| Dispositional Empathy in Scientist and Practitioner Psychologists: Group Differences and Relationship to Self-reported Professional Effectiveness | Hall et al., (2000) | Cross-sectional | General psychology | USA | 290 | 7-point Likert type scale | Among the psychologists in the study who reported practicing therapy, higher scores on personal distress were associated with less job satisfaction and less effectiveness at therapy. |
| Stability and Change in Counseling Psychologists' Identities, Roles, Functions, and Career Satisfaction Across 15 Years | Goodyear et al., (2008) | Longitudinal | Clinical psychology | USA | 704 | 6-point Likert scale | When rating the satisfaction of counseling as a career, 77% of SCP members in 1985 and 84% members in 2000 rated this item as either 'quite satisfied' or 'very satisfied'. The proportion of SCP members who would choose counseling psychology as a field if they were starting over increased from 1985 (47.8%) to 2000 (55.4%), which suggests increasing satisfaction. |

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|--|-----------------------------|-----------------|------------------------|--------------|-----|---|--|
| Perceptions of Job-Satisfaction, Job Stability, and Quality of Professional Life Among Rural and Urban School-Psychologists | Ehly and Reimers, (1986) | Cross-sectional | Educational psychology | USA | 159 | 7-point Likert scale on items measuring job satisfaction | On most variables, psychologists working in rural area scored higher than those working in urban areas. Additionally, variables "directly working with children" and "autonomy" have been scored the highest by both groups. |
| How do Industrial Psychologists and Human Resource Management Practitioners Perceive Their Status and Job Satisfaction? | Donald and Bleekers, (2012) | Cross-sectional | Other | South Africa | 46 | Job Diagnostic Survey (JDS) | The industrial psychologists and HRM practitioners in this study reported similar levels of job satisfaction despite the different statutory registration requirements for entry into jobs in the broad fields of industrial psychology and HRM. Results indicate high levels of job satisfaction for both groups. |
| The Quality of Employment in the Career of Young Psychologists and Its Impact on Their Job- | De Witte and Lagrou, (1990) | Cross-sectional | General psychology | Belgium | 166 | 5-point Likert scale on 6 items related to job satisfaction | Job security and required level of education have a significant relationship with job satisfaction |

| Satisfaction and Life-Satisfaction | | | | | | | |
|--|----------------------|-----------------|------------------------|-----------|-----|---|--|
| Clinical-Psychology in Ireland - A National Survey | Carr, (1995) | Cross-sectional | Clinical psychology | Ireland | 111 | Custom questionnaire (no details provided) | Two thirds of the sample were very satisfied (22%) or quite satisfied (43%) with their job. 9% were slightly satisfied. The remainder were slightly dissatisfied (12%), quite dissatisfied (10%) or very dissatisfied (5%). Over half (56%) said that if they could choose their career again they would choose clinical psychology. |
| Organizational Values, Job Experiences and Satisfactions among Female and Male Psychologists | Burke et al., (2005) | Cross-sectional | General psychology | Australia | 458 | 5-point Likert scale (seven-items) | There was no significant difference in level of job satisfaction between male and female psychologists. |
| Role Function and Job Satisfaction of School Psychologists Practicing in an Expanded Role Model | Brown et al., (2006) | Cross-sectional | Educational psychology | USA | 74 | Modified Minnesota Satisfaction Questionnaire | No significant correlations with overall job satisfaction were found among the three demographic variables. No significant relation between overall job satisfaction and discrepancies between |

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| | | | | | | | actual and desired time spent in the seven role functions or total discrepancy was found with the exception of time spent in multidisciplinary team meetings. The discrepancy between actual and desired time spent in multidisciplinary team meetings also is significantly associated with overall job satisfaction. |
| Doctoral and Nondoctoral Practicing School Psychologists: Are There Differences? | Brown et al., (1998) | Cross-sectional | Educational psychology | USA | 232 | 5-point Likert scale | There was no significant difference in level of job satisfaction between doctoral and nondoctoral practitioners. |
| Job Satisfaction of School Psychologists in the United States - A National Study | Brown et al., (1998) | Cross-sectional | Educational psychology | USA | 228 | Modified Minnesota Satisfaction Questionnaire | Most psychologists scored within the 'Satisfied' range for their job (80.7%), while another 5.3% were within the 'Very Satisfied' range. 92% of participants expressed that they intend to stay in the profession of school psychology in the next five years. |

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| Job Satisfaction of Correctional Psychologists: Implications for Recruitment and Retention | Boothby and Clemens, (2002) | Cross-sectional | Other | USA | 830 | Custom survey (5-point Likert scale) | Total satisfaction was negatively related to number of inmates per facility. Respondents working in the federal system were significantly more satisfied than state employees on eight job dimensions. The job dimensions rated most highly by correctional psychologists included safety and relationships with clients. |
| COVID-19, Mental Health, Technology Use, and Job Satisfaction Among School Psychology Trainers | Bocanegra et al., (2023) | Cross-sectional | Educational psychology | USA | 92 | Short Index of Job Satisfaction (SIJS) | COVID-19-related changes, such as increased technology use, isolation, and training modifications, were associated with changes in job satisfaction |
| The Impact of Gender on Productivity and Satisfaction among Medical School Psychologists | Black and Holden, (1998) | Cross-sectional | Educational psychology | USA | 293 | Custom survey | In the area of job satisfaction, females indicated less satisfaction than males with salary, but not with professional autonomy, promotion opportunity, professional development, travel support, or clinical, research, administrative, and teaching activities. |

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|---|---------------------------|-----------------|--------------------|--------------|----|--|--|
| | | | | | | | When comparing themselves to psychologist colleagues in a department of psychology, females reported significantly less satisfaction with perceived professional respect than did their male colleagues. |
| Differences regarding Job Satisfaction and Job Involvement of Psychologists with Different Dominant Career Anchors | Bester and Mouton, (2006) | Cross-sectional | General psychology | South Africa | 62 | Short form of the Minnesota Satisfaction Questionnaire | The general, intrinsic and extrinsic level of job satisfaction of psychologists in the Free State is fairly high, while their job involvement is fairly low. Research done in South African showed no significant correlation between job satisfaction and job involvement. |
| Job Satisfaction of Police Psychologists | Bergen et al., (1992) | Cross-sectional | Other | USA | 47 | 10-point Likert scale | Data suggests that police psychologists are extremely satisfied with their work, and that the amount of animosity they perceive from the other officers is quite low. No relationship emerged among the variables of job satisfaction, perceived officer animosity and job involvement |

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