

OCCUPATIONAL STRESS AMONG POLICE PERSONNEL – A LITERATURE REVIEW

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Abstract

Given the unprecedented times of pandemics, police forces across the world have given the most important contributory services to handle the situation. On par with medical professionals and other frontline warriors in healthcare, police forces certainly deserve greater appreciation for their committed efforts to implement the necessary protocols among the public to contain the spread of the pandemic. Police and security forces are among the public servants with the most responsible tasks and are at the risk of exposure to continuous stress throughout their careers. Unlike many other positions, there are very few chances of risk aversion to staying away from stress for the police forces. Many times, such stress leads to negative outcomes and takes a toll on the mental health of the police personnel. Stress in turn leads to further deterioration of work and family conditions, driving the individual towards high vulnerability. From a broader perspective, if higher proportions of the police forces are facing intolerable levels of stress, the law and order situation of the country would be at risk. Hence, it is important to study and regularly measure the exposure levels of police officers to stress. In this context, an attempt is made to examine the various forms of stress measurement research carried out across the world. This paper comprehensively reviews and summarizes the studies on stress-related research among police forces. The paper brings out several studies to light and compares and contrasts the tools used to measure stress. The study also advocates the areas having scope for further research in the context of stress measurement.

Keywords:

Occupational stress; Police Forces; Stress Measures; Literature Review.

1 Introduction

Given the unprecedented times of pandemics, police forces across the world have given the most important contributory services to handle the situation. On par with medical professionals and other frontline warriors in healthcare, police forces definitely deserve greater appreciation for their committed efforts to implement the necessary protocols among the public to contain the spread of the pandemic. Police and security forces are among the public servants with the most responsible tasks and are at the risk of exposure to continuous stress throughout their careers. Police personnel with raised stress levels are at the risk of experiencing psychological and physiological woes (Swanson et al., 1998), furthermore imperiled in situations of pandemics (McEwen & Stellar, 1993). Unlike many other positions, there are very few chances of risk aversion to staying away from stress for the police forces. Many times, such stress leads to negative outcomes and takes a toll on the mental health of the police personnel. Facing stressful situations is not uncommon for police forces. Implicit to the job duties of all police forces, stress prevails, and police forces are expected to withstand the stressful conditions (Gerber et al., 2010a). Stress in turn leads to further deterioration of work and family conditions, driving the individual towards high vulnerability. From a broader perspective, if higher proportions of the police forces are facing intolerable levels of stress, the law and order situation of the country would be at risk.

Stress levels among police cannot be lowered by false pretention or avoidance (He et al., 2002). Organizational factors also contribute to higher levels of stress among police (Biggam et al., 1997). Police officers are always susceptible to stress as they cannot evade their responsibility of facing risks and protecting society (Holmes and Smith, 2012). Police personnel is expected to provide services

round the clock to ensure the safety of the public. Under such conditions, police officers happen to work in various shifts spread throughout the day. Varying shift times along with chronic stress conditions cause disturbed sleep patterns. (Gerber et al., 2010b). More particularly, officers working in special forces are at a higher risk of occupational stress exposure compared to their counterparts on routine field operations (Chan et al., 2019).

Co-workers and supervisors play a significant role in channelizing and reducing or increasing the stress impact on police personnel. Specifically, relationship with supervisors plays a central role in explaining stress levels among police officers and the effect of coping mechanisms (Morash et al., 2008). In the contemporary world, there is a gradual increase in the representation of women officers in police forces where male dominance is prevalent. The general stress levels among female and male officers differ to a great extent (Violanti et al., 2016). It is important to document and carry out thorough research among the police officers. Nevertheless, vital data related to police investigation is not available when needed (Glomseth et al., 2007).

Given the backdrop discussed and the context under which the police forces operate, approaching and obtaining data related to their stress is a challenging task. Despite the difficulties involved, there is growing research evidence in the area of stress among police forces. In this context, an attempt is made to examine the various forms of stress measurement research carried out across the world. The objective of the current work is to present a review of the literature on occupational stress among police personnel. In the remainder of the paper, works pertaining to stress research among police/security forces have been comprehensively reviewed and summarized. Some of the important studies on stress-related research among police forces have been tabulated. The present paper brings out several studies to light and compares and contrasts the tools used to measure stress. The study also advocates the areas having scope for further research in the context of stress measurement in the last segment.

2 Approach Adapted for Literature Review:

A systematic search activity was conducted during February 2021 to identify the most influential and contributing works in the area of occupational stress among police personnel. The first instance search operations gave an output of more than 800 results in the targeted area. To reach the desired works, keywords such as “Police Personnel”, “Police Officers”, “Occupational Stress”, “Measuring Stress”, “Stress Scales” etc. were used in different combinations using Boolean operators in various research databases. All of the works were not relevant to the present study. However, close observation and further refinement helped in identifying About 130 works that were either partially or totally relevant to the set study objectives. For the research purpose of the present study search options on ScienceDirect, EBSCO, Google Scholar, and other popular databases were accessed. The period of consideration is set to studies published in the past two decades, starting from the 1990s.

Prior to considering the research works for inclusion, the titles, abstracts, and keywords were thoroughly analyzed. The final filtration process brought out about 90 papers to be considered for inclusion in the present literature review. Few omissions were done at the final phase, as the contribution of the papers were not bearing any connection with police forces. The resultant works from the refinement process have been tabulated and presented in Table 1.

TABLE 1: Studies focusing on occupational stress among police officers and armed forces.

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
1	Violanti and Aron	1995	U.S.	103	Police Officers	Police Stress Survey (PSS) (Spielberger et al., 1981)
2	Lord	1996	U.S.	181	Police Officers	Nine Major Stressors
3	Storch and Panzarella	1996	U.S.	79	Police Officers	State-Trait Anxiety Inventory Spielberger et al. (1983)
4	Stephens et al.	1997	New Zealand	527	Police Officers	The Civilian Mississippi-PTSD (Keane, Caddell, and Taylor, 1988)
5	Brown and Grover	1998	England	594	Police Officers	General Health Questionnaire GHQ(12) (Goldberg and Williams, 1988), partial order scalogram analysis (POSA)
6	Bar-On et al.	2000	North-Rhine Westfalia, Germany	167	Police officers, child care workers, and educators in mental health care	Emotional Quotient Inventory (EQ-i)
7	Suresh et al.	2000	Hyderabad, India	14	Traffic Police	Medical Tests
8	Patterson	2003	U.S.	233	Police officers	Multiple Measures, Hierarchical Multiple Regression Analysis
9	Newman and LeeAnne Rucker	2004	U.S.	100	Deputy U.S. Marshals	Spielberger et al.'s (1983) State-Trait Anxiety Inventory.
10	He et al.	2005	U.S.	1106	Data Source: Gershon's (1999)	Brief Symptom Inventory (BSI), (Symptom Check List 90 (Derogatis & Melisaratos, 1983))
11	Botha and Pienaar	2006	South Africa	157	Correctional Officers	Correctional Officer Stress Inventory (COSI), Work Locus of Control Scale (WLCS) (Spector, 1988)
12	Lau et al.	2006	Norway	3272	Police Personnel	The Job Stress Survey (JSS) (Spielberger & Vagg, 1999)
13	Mostert and Rothmann	2006	South Africa	1794	Police Members	Maslach Burnout Inventory-General Survey, Utrecht Work Engagement Scale, Police Stress Inventory, and Personality Characteristics Inventory
14	Witteveen et al.	2006	Amsterdam, Netherlands	1168	Police	Self-Rating Inventory for Posttraumatic Stress Disorder (SRIP) and the Impact of Event Scale

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
15	Martinussen et al.	2007	Norway	223	Police Officers	(IES), Confirmatory Factor Analysis Maslach Burnout Inventory-General Survey (Maslach et al., 1996)
16	Swatt et al.	2007	Baltimore, Maryland, U.S.	980	Police Officers	Agnew's General Strain Theory (GST), Multivariate logit and Ordinal logit Regression models
17	Gustafson	2008	Baltimore, U.S.	1106	Police Officers	Tokenism theory (Kanter, 1977)
18	Morash et al.	2008	South Korea	686	Police Officers	Multiple Measures
19	Lilly et al.	2009	U.S.	374	Female Police Officers	Multiple Measures
20	Gerber et al.	2010	Switzerland	533	Police Force and Emergency Response Service Officers	The Screening Scale for Chronic Stress (SSCS) of the TICS (Trier Inventory for the Assessment of Chronic Stress) (Schulz, Schlotz, & Becker, 2003).
21	Gerber et al.	2010	Switzerland	460	Police Officers	Trier Inventory for the Assessment of Chronic Stress (TICS: Schulz, Schlotz, & Becker, 2003)
22	Inslicht et al.	2010	U.S.	278	Police Recruits	self-report Symptom Checklist 90-Revised (SCL-90-R) (Derogatis, 1994), Global Severity Index (GSI)
23	Salters	2010	Boston, U.S.	206	Police and firefighter recruits	Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992)
24	Shane	2010	Michigan, New Jersey, U.S.	461	Police Officers	Police Stress Questionnaire ([PSQ], McCreary & Thompson, 2006), Multiple Regression
25	Wang et al.	2010	U.S.	119	Police Recruits	PTSD Checklist—civilian version (PCL-C, Weathers et al., 1993), Hierarchical linear regression analysis
26	Witteveen et al.	2010	Netherlands	1880	Police Officers and Frefighters	Self-rating Inventory for PTSD (SRIP; Hovens et al., 2002)

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
27	Selokar	2011	Wardha, India	102	Police Personnel	Professional Life Stress Test by Fontana (1989)
28	Mazza et al.	2012	Iraq	35	Military Police Officers	Mississippi Scale (MSS) (Keane et al., 1988)
29	Moon and Jonson	2012	Northern Kentucky, U.S.	180	Law Enforcement Personnel	General Strain Theory (GST) framework
30	Pietrzak et al.	2012	U.S.	8466	Police	Multiple Measures
31	Shucard et al.	2012	Buffalo, U.S.	15	Police Officers	Posttraumatic Stress Disorder Checklist–Civilian version (PCL-C; Weathers et al., 1993)
32	Weir et al.	2012	U.S.	25622 (observations from secondary data)	Protective Service Occupations (PSOs)	Logistic Regression
33	Beletsky et al.	2013	Kyrgyzstan	313	Police Officers	Multivariate Analysis
34	Covey et al.	2013	Buffalo, U.S.	14	Police Officers	Clinician-Administered PTSD Scale (CAPS-DX; Blake et al., 1995)
35	Jayakrishnan et al.	2013	Calicut, India	900	Policemen	Multivariate analysis
36	Kaur et al.	2013	Vizianagaram, AP, India	150	Police - Head Constables	General Health Questionnaire-28 (GHQ-28), Eysenck's Personality Questionnaire (EPQ), Coping Checklist-1 (CCL-1)
37	Biggs et al.	2014	Australia	1196	Police Officers and Civilian Staff	Utrecht Work Engagement Scale (UWES) (Schaufeli, Bakker, & Salanova, 2006)
38	Chakraborty et al.	2014	Mumbai, India	31	First Responder Police Officers	Survey developed from multiple sources
39	Nathawat and Dadarwal	2014	Rajasthan, India	300	Police Personnel	Not-Described
40	Saya and Venkata	2014	Puducherry, India	296	Police Personnel (Urban)	Cohen's Perceived Stress scale, Binomial-Logistic Regression, Multiple Regression Analysis
41	Habersaat et al.	2015	Switzerland	84	Officers from the criminal, community, and emergency division	Multiple Measures, Cluster analysis
42	Kar and Singh	2015	Uttar Pradesh, India	300	Police Personnel	Occupational Stress Questionnaire

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
43	Karunanidhi and Chitra	2015	Chennai, India	72	Women Constables	Police Stress Inventory (Suresh, 1992)
44	Kazmi and Singh	2015	Delhi and U.P., India	350	Police Personnel	Police Stress Questionnaire (McCreary & Thompson, 2006)
45	Sharma	2015	India	415	Soldiers from Armed Forces	Occupational Stress Scale adapted from Edwards, Webster, Laar, and Easton (2008) and Sharma, Kaur, and Sharma (2011), Confirmatory Factor Analysis
46	Shim et al.	2015	South Korea	319	Police Officers	Survey of Police Officers' Perception on Improving Criminal Investigation (A1-2007-0008) (KSSDA) (Sin, 2007)
47	Singh and Nayak	2015	Delhi, India	599	Police Officials	Job Stress (Lait and Wallace, 2002)
48	Strahler and Ziegert	2015	Germany	50	Police Officers	Screening Scale of Chronic Stress derived from the Trier Inventory of Chronic Stress (SSCS-TICS; Schulz et al., 2004),
49	Walvekar	2015	Bijapur, Karnataka, India	108	Police Constables	Perceived stress scale (PSS)
50	Yun and Lee	2015	South Korea	570	Police Officers	General Strain Theory (GST), OLS, binary logistic, and ordinal logistic regression
51	Kim et al.	2016	South Korea	512	Police Officers	Brief Symptom Inventory (BSI), Symptom Check List 90 (Derogatis and Melisaratos, 1983)
52	Fekedulegn et al.	2017	Buffalo, New York, U.S.	464	Police Officers	Chronic fatigue questionnaire (Barton et al., 1995), Poisson Regression
53	Kumar and Kamalanabhan	2017	India	491	Inspectors and Sub Inspectors of Police	Multiple Regression, Hierarchical Regression
54	Lambert et al.	2017	Sonipat and Rohtak, Haryana, India	827	Police Officers	Bivariate and Multivariate Analysis
55	Lone et al.	2017	Norway	38	Police Investigators	Competing Values Framework (Quinn & Rohrbaugh, 1983)
56	Molines et al.	2017	France	718	Police Officers	Multiple Measures

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
57	Ragesh et al.	2017	Calicut, Kerala, India	406	Police Personnel	Operational Police Stress Questionnaire (PSQ-OP) and Organisational Police Stress Questionnaire (PSQ-ORG)
58	Singh	2017	Gorakhpur, India	240	Police Personnel	Objective Work Stress Scale, Feeling of Work Stress Scale (Cooper 1983), and Coping Scale (Carver et al. 1989)
59	Violanti et al.	2017	U.S.	338	Police Officers	Police Stress Survey (PSS) (Spielberger et al., 1981)
60	Boyanagari et al.	2018	Adilabad, AP, India	123	Police Constables (Male)	Association between demographics, physical fitness, addictive habits, and hypertension
61	Chitra and Karunanidhi	2018	India	63	Female Police Officers	Protective model of resilience, Control Group Experimentation, pre-post-followup research design
62	DeVylder	2018	U.S.	70	Police Officers	WHO-CIDI psychosis screen, Adverse Childhood Experiences questionnaire (Felitti et al., 1998), Police Exposure to Difficult Situations scale
63	Gillet et al.	2018	France	1676	Trainee Police Officers	Various Measures, Longitudinal growth mixture analyses (GMA)
64	Gomes et al.	2018	Brazil	31110	Police Officers	Retrospective Cohort
65	Lambert et al.	2018	Sonipat and Rohtak, India	827	Police Officers	Job stress (Crank et al., 1995)
66	Meena et al.	2018	India	300	Police Personnel	World Health Organization-STEPS tool
67	Onkari and Itagi	2018	Dharwad, Karnataka, India	60	Women Police	Occupational Stress Scale (Srivastav and Sing, 1984), Socioeconomic Status Scale (Agarwal et al., 2005)
68	Potard et al.	2018	France	100	Police Officers	General Health Questionnaire (GHQ-28) (Goldberg & Williams, 1988)
69	Athirah Diyana et al.	2019	Kuala Lumpur	137	Male Traffic Policemen	Standardized Nordic Questionnaire (SNQ)

S. No.	Source/ Author(s)/ Reference	Publication Year	Country/ Region Covered	Sample (N)	Organization/ Context/ Group covered	Methods & Measures
70	Foy et al.	2019	Ireland	678	Academic Staff, Higher Education Institution	Confidential ASSET survey instrument (Cartwright and Cooper, 2002), Multiple Linear Regression
71	Frenkel et al.	2020	Europe (Austria, Germany, Switzerland, the Netherlands, and Spain)	2567	Police Officers	Mixed-method Study, Three-level growth curve models
72	Giessing et al.	2020	Germany	1 (90 data points)	Patrol Police Officer	self-report data (mood, stress) and saliva
73	Grover et al.	2020	India	623	Police Personnel, During Covid-19 Pandemic	Patient Health Questionnaire-4 (PHQ-4) and Perceived stress scale (PSS)
74	Houdmont et al.	2020	UK	34 (Interview) + 229 (Survey)	Rural Police Officials	General Health Questionnaire (GHQ-12) (Goldberg and Williams, 1988)
75	Jude and Leena	2020	Trivandrum, Kerala, India	120	Civil Police Officers	Personal data schedule and DASS-21 (Lovibond & Lovibond, 1995)
76	Queirós et al.	2020	Portugal	2057	Police Officers	Review of Literature, Operational Police Stress Questionnaire (PSQ-Op)
77	Poteyeva and Sun	2009	Review of Literature			
78	Finney et al.	2013	Review of Literature			
79	Klimley et al.	2018	Review of Literature			
80	Laufs and Waseem	2020	Review of Literature			
81	Di Nota et al.	2020	Review of Literature			
82	Habibi et al.	2021	Review of Literature			
83	Yung et al.	2021	Review of Literature			

The summary results in Table 1 indicate the comprehensive nature of the works carried out in examining the stress levels among police forces to a varying range of breadth and depth. The studies covered all associated areas of stress that included: occupational stress, job stress, perceived stress, stressful events, stressful emotions, physiological responses during stress, psychological responses during stress, burnout symptoms, PTSD, suicidal tendencies, risk behaviors, personal and family wellbeing, etc. The sampling ranges among the empirical studies were between as low as 14 to the highest of more than 30000 drawn from the secondary sources. There are a few studies that considered one or less than ten samples too. However, a good number of studies used sample sizes around above 100 and below 1000. While the first study listed and considered in the present review dates to 1995, the latest research is reported in 2021. Studies on the review of literature in related fields of stress are also included at the end of the list. The studies included countries across the world. In particular, the present review identified studies in the Indian context too. While a significantly higher number of studies were observed from the U.S., there are considerable representations from Asian, European, and

Latin American countries. Yet, the representation from the African, and Sub-Saharan regions was relatively low in the research studies. There are a handful of studies that attempted to summarize the global phenomenon by involving samples from across the countries.

While there are a few studies that have used instruments that are not validated and some that customized and modified the instruments to suit their study purposes, most of the studies have used the measures and instruments that are well standardized and validated by sizeable empirical evidence. The instruments that have witnessed repeated usage and acceptance in the studies include Police Stress Survey (PSS) (Spielberger et al., 1981), State-Trait Anxiety Inventory (Spielberger et al., 1983), Brief Symptom Inventory (BSI)-(Symptom Check List 90 (Derogatis & Melisaratos, 1983)), Agnew's General Strain Theory (GST), TICS (Trier Inventory for the Assessment of Chronic Stress) (Schulz, Schlotz, & Becker, 2003), Police Stress Questionnaire ([PSQ], McCreary & Thompson, 2006), Mississippi Scale (MSS) (Keane et al., 1988), Posttraumatic Stress Disorder Checklist–Civilian version (PCL-C; Weathers et al., 1993), Cohen's Perceived Stress Scale, General Health Questionnaire-28 (GHQ-28), Operational Police Stress Questionnaire (PSQ-Op).

3 Observations on Stress-Related Perspectives in the Studies:

While measuring attitude towards job-related stress and police roles, [Poteyeva and Sun \(2009\)](#) reported evidence in favour of gender differences. [Botha and Pienaar \(2006\)](#) cited several studies even reporting higher stress levels among the racial minorities and younger correctional officers too in comparison to other groups.

The faceoff between citizens and police too has not always been pleasant. As societies become expansive and free, the propensity to question inequalities increases, making discord and strife between citizens and police inevitable ([Holmes and Smith, 2018](#)). In situations of traumatic stress, [Inslicht et al. \(2010\)](#) found regulation of emotions playing a key role in preventing accompanying distress. [He et al. \(2005\)](#) gave an account of various studies highlighting the role of support from supervisors, co-workers, and peers in handling stress emergent while performing police duties. [Goldenberg et al. \(2020\)](#) cited several pieces of evidence proving the role of support in bettering stressful situations.

[Kim et al. \(2016\)](#) found homogeneity among the Korean public and police while observing striking contrast in the case of American police operating in a more diverse and active setup. [Stanley et al. \(2016\)](#) found the trivial role of work-related stress in suicidal tendencies among first responders in police departments. [Pinedo et al., \(2017\)](#) reported results on the mediating role of perceived stress on depressive symptoms among the police. In the context of stress research, [Giessing et al. \(2020\)](#) observe significant progress with the use of salivary stress markers.

4 Discussion on Usage of Scales and Views of Different Researchers

There are some interesting arguments about the stress measures applied by the researchers. Across the world, the application of various stress measures available is witnessed. Due to the stark distinctions among the population characteristics under consideration, and also due to the variations in the standardization of the scales, there is no one fit-for-all tool to measure stress. More particularly, countries and regions in different parts of the world have deployed indigenous as well as adapted measures that particularly suit their police forces to measure the stress levels.

While most of the stress measures suggested using five-point or seven-point response mechanisms, there are quite a few deviations to the norm. [He et al. \(2005\)](#) found it surprising to use four-point scales by [Gershon's \(1999\)](#) survey. [Swatt et al. \(2007\)](#) have long back suggested the use of well-documented and validated measures as stress assessment instruments for future studies. Scales and measures are normally developed using rigorous methods of testing reliability and validity. However, ([Gerber & Pühse, 2009](#)) found a high prevalence of poorly validated measures in the earlier studies, which led them to identify and use validated measures. [Gerber et al., \(2010a\)](#) also highlighted the sweeping generalizations and exposure to subjectivity added to the lack of validation among the stress measures. [Holmes and Smith \(2012\)](#) also opine that inaccurate variables, weakness in research designs, and causal generalizations in most of the stress-related studies have contributed to the poor and less useful

form of instruments. Frenkel et al., (2020) indicated that they measured perceived stress and other related symptoms of stress and burnout with the help of a single item rated on a seven-point Likert scale. On the other extreme, Patterson (2003) used a scale with twenty-nine items to measure work-related stress levels and a thirteen-item scale for non-work-related symptoms identified by the frequency of occurrence of stressful events. Lau et al. (2006) claim their study results to be alike with that of those obtained by Vollrath and Torgersen (2000), though the scales to measure stress and personality were quite different. Moon and Jonson (2012) used a scale to particularly measure the removal of positive value stimuli. DeVyllder (2018) recommends the utilization of psychosis measures which include distress-subcales in future studies. Gillet et al. (2018) made use of factor scores obtained from the preliminary measurement models instead of applying the scores using scales. To appraise the occupational trauma exposure, Behnke et al. (2020) used the RESQ-Critical Exposure as a measure. While applying physiological measures to examine stress, Chan et al. (2019), together examined hair cortisol and Shuttle box. Surprisingly, while using the perceived stress scale, Giessing et al. (2020) were not able to find any responses with events depicting very stressful situations from any of the study responses. Kim et al., (2016) observed that the responses obtained in their study using the instruments were merely expressed forms of attitude or behaviors but not the same ones in themselves. Inslight et al. (2010) affirmed that their study imbibed with the prospective design was among the first of the kind to assess the role of family history on symptoms of posttraumatic stress. Violanti et al. (2017) used the Spielberger Police Stress Survey to assess stressors raising from various circumstances and events. He et al. (2019) used scores on their pilot study to refine the scales developed by combining scales developed by Fiske, Cuddy, and Glick (2007) and Fiske et al (2002), to develop their study instrument. To examine symptoms related to baseline depression, Wang et al. (2010) applied the depression subscale. Some studies have contributed widely accessible and researchable data for researchers. For instance, the BCOPS study helped many researchers carry out studies using the data (Violanti et al., 2017) and develop newer insights.

5 Limitations

The review of literature carried out in the present study is subjected to few limitations. All the studies that are published may not be a part of the studies considered. Due to technical reasons and the limitations of full access, the researcher was not able to access all databases and all researchers. Hence, there may be possible omissions of some relevant studies. The time frame considered is post-1990s. Only studies from 1995 onwards are included for discussion. All the studies cited or mentioned were not discussed in detail as it would be practically impossible and will cause undue expansion of the work. Certain studies based on clinical experimentation were also included in the studies.

5.1 Scope for further research

The literature review was carried out in a short time frame. There are certain areas having scope for furthering present work. Even more comprehensive views of the studies can be obtained by the inclusion of missing studies in future works. While refining the studies considered, research with valid instruments can be set as a fine criterion for inclusion. There is a scope to capture region-wise and demographics-focused studies. Particular comparison of studies based on a single instrument can be carried out. There is also ample scope to conduct a meta-analysis in this domain by considering the methods, instruments used, and results of the studies.

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