RESEARCH ARTICLE

SYSTEMATIC REVIEW OF THE PREVALENCE OF ANXIETY AND DEPRESSION DISORDERS AMONG PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Manuscript Info

Abstract

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Background: Mental health is an important but often disregarded part of inflammatory bowel disease (IBD) patient care, with difficulties defining effective medications and psychological health services. Anxiety and sadness are the most frequent psychosocial problems among IBD patients. The rising frequency of these mental problems calls for mental screening of all IBD patients at the initial appointment.

Objective: A growing number of research on anxiety and depression in IBD have been undertaken; nevertheless, there is no clear consensus on the prevalence of anxiety and depression in this group. The goal of this systematic review was to consolidate current data on the prevalence of depression and anxiety disorders in individuals with IBD.

Methods: Authors began with recognizing the important examination proof that spots light on the prevalence of anxiety and depression among IBD patients. We led electronic writing look in the accompanying data sets: Ovid Medline (2010 to present), Ovid Medline Daily Update, Ovid Medline in process and other non-filed references, Ovid Embase (2010 to present), The Cochrane Library (latest issue) and Web of Science. Just examinations in English language will be incorporated. The precise selection was acted in close collaboration with a clinical examination curator.

Results: There were 10 articles found, with a total of 26097 participants. The pooled prevalence estimate for anxiety disorders was 20.3%, and 13.3% for depression. When compared to those in remission, IBD patients in active illness showed a 75.6% greater prevalence of anxiety. Depressive symptoms were more common in

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Crohn's disease than in UC (P0.001), and more common in active illness than in IBD patients in remission (P= 0.004).
Conclusion: Results from this systematic review indicate that patients with IBD have about a 20.3% prevalence rate of anxiety and a 13.3% prevalence rate of depression.

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Introduction:-

Inflammatory Bowel Disease (IBD) is an ongoing incendiary ailment that makes harm to the gastrointestinal mucosal surface. The two subgroup infections of IBD are Crohn's Disease (CD) and ulcerative colitis (UC). IBD is turning out to be more prevalent and predominant over the world. As per Molodecky et al. systematic review, the commonness of IBD is most elevated in Europe (UC: 505 for each 100,000 individuals, CD: 322 for every 100,000) and North America (UC: 249 for every 100,000, CD: 319 for each 100,000), with 75 percent of CD investigations and 60 percent of UC concentrates on showing a rising rate after some time [1]. The ongoing idea of the illness, side effects of disease (fatigue, loose bowels, pain), expanded mortality rates, and work impedance all add to a critical infection trouble in IBD patients [2, 3].

Regardless of certain indications of expanded anxiety and stress in IBD patients, most of these people do not get the important psychological well-being treatment [4, 5]. IBD patients with anxiety and depressive side effects have a more awful personal satisfaction [4, 6], and their infection advances all the more quickly [7]. Depressive problems are a significant supporter of worldwide sickness trouble [8, 10]. As far as ailment trouble and debilitated psychosocial working, summed up tension confusion is believed to be like sorrow [11]. Persistently debilitated individuals experiencing huge sorrow regularly have more actual side effects and a lower capacity to really focus on themselves [12]. Besides, these patients will cause more noteworthy clinical expenses [12].

While a few individual examinations have analyzed the recurrence of mood and anxiety issues in IBD patients, no careful orderly assessment has been embraced. One earlier assessment included only few exploration [13], while one more just included preliminaries with a benchmark group [7], limiting the amount of information accessible for examination. As indicated by a complete appraisal of the psychosocial change of teens with IBD, those with IBD displayed more prominent commonness of burdensome problems than those with other persistent circumstances [14]. They found, nonetheless, that uneasiness side effects, nervousness problems, and melancholy side effects (not messes) were the same in IBD kids contrasted with different adolescents. The objective of this systematic review was to: 1) assess the prevalence of anxiety symptoms and depressive feelings in IBD patients, 2) assess whether sickness type (UC, CD) impacts the frequency, 3) assess dynamic infection versus illness going away on pervasiveness of disposition and nervousness issues and side effects, and 4) portray the sort of estimations utilized and mean qualities revealed for each action. Acquiring a superior comprehension of the commonness of anxiety and depressionin IBD patients can assist with directing clinicians, drive further exploration, and diminish the all-out weight of infection in these patients.

Methods:-

Review Question

This review seeks to evaluate and point out the prevalence of anxiety and depressionamong inflammatory bowel disease patients. The specific review questions to be addressed are:
(1) What is the prevalence of anxiety and depression among inflammatory bowel disease patients?
(2) What is the key role of inflammatory bowel disease in causing anxiety and depression among patients?

Searches

We began with recognizing the important examination proof that spots light on the prevalence of anxiety and depression among IBD patients. We led electronic writing look in the accompanying data sets: Ovid Medline (2010 to present), Ovid Medline Daily Update, Ovid Medline in process and other non-filed references, Ovid Embase (2010 to present), The Cochrane Library (latest issue) and Web of Science. Just examinations in English language will be incorporated. The precise selection was acted in close collaboration with a clinical examination curator.

Also, the bibliographies of any qualified articles recognized was checked for extra references and reference look were done for all included references utilizing ISI Web of Knowledge.

We considered "published" articles to be compositions that showed up in peer-reviewedjournals. Articles present in grey literaturewere excluded from our review.

Types of studies to be included
We included articles covering how to coordinate different review plans in orderly review of prevalence of anxiety and depression among IBD patients. We did exclude articles only depicting the presence of anxiety and depression among IBD patients.

We concentrated on the prevalence of anxiety and depression among IBD patients. We included articles depicting sample sizes and articles that planned to sum up their outcomes to the populace which test was drawn from. Case series and case reports were excluded from our search. Studies from all area all over the world were incorporated with focus around studies from Kingdom of Saudi Arabia

Participants
The systematic review included examinations with tests of population>20 years who had an affirmed diagnosis of IBD.

Searching key words
For every data set, looking through was led by utilizing a mix of the accompanying keywords: (Inflammatory bowel disease OR ulcerative colitis OR Crohn's disease OR depression OR anxiety OR Prevalence OR Kingdom of Saudi Arabia OR systematic review).

We included examinations enrolling members in everyone as well as clinical settings. Studies were incorporated assuming they revealed prevalence of anxiety and depression among IBDpatients with either ulcerative colitis or Crohn's disease. No comparator or control test size is required in the review to be incorporated.

Studies selection process
All list items were brought into an EndNote record. Two analysts evaluated titles and abstracts for their likely pertinence.

One reviewer freely screened titles and abstracts from the search and any articles that report prevalence of anxiety and depression among IBDpatients. We gained the full text of articles that possibly meet the eligibility criteria.

There was no geographical limit on the included studies. Just published articles in the English language will be incorporated.

Outcomes
Primary outcome
To determine the prevalence of depression and anxiety among inflammatory bowel disease patients.

Secondary outcome
None.

Information extraction, (choice and coding)
Information was extracted from the included articles utilizing an electronic information extraction structure on Microsoft Access programming. Two reviewers freely extracted information, utilizing a standard information extraction structure which was created by the survey creators with the end goal of the review. The extraction structure incorporated the accompanying data:
1- Publication subtleties: title, authors, journal name and year and city, of distribution, country in which the review was led, sort of distribution, and wellspring of financing.
2- Study subtleties: concentrate on plan (cross-sectional, cohort, case-control), settings (clinical or population based), concentrate on transience (planned or review), patients' enlistment techniques (successive or non-

continuous), the geographical area, year of information assortment and reaction rate, qualification (consideration and avoidance rules), name of appraisal tool(s), approval of evaluation tool(s).

3- Study members' subtleties: number of people reviewed/examined, population qualities including mean age (SD), and gender distribution, relationship status, demographic data.

Data management
A descriptive statistics is employed and relevant data are extracted from eligible studies and presented in tables. We then presented a narrative synthesis of the summary of the prevalence of anxiety and depression among inflammatory bowel disease patients.

Results:-
A total of 531 studies were identified in the search, all of them were assessed for eligibility, and 10 articles were included in this review (Figure 1). Of the 10 articles, all of them were published journal articles. Studies that were published in peer-reviewed journals were eligible for screening. However, 44 studies were excluded at the beginning of screening because 20 studies were addressing depression or anxiety in pooled population of chronic diseases including ulcerative colitis, Crohn's disease and other disease such as cancer. Furthermore, 24 studies were published in journals not listed in the databases we searched. Among the screened 43 studies, only 21 studies met the criteria to be included in this review. Finally, 10 studies were included that authors could extract all required data from abstracts or full texts.

A total of 26097 IBD patients were included in the analysis (with one study consisting of 15569 of the participants). The male to female ratio in the pooled of participants was 2:1.3. The average age of participants from 10 studies that provided a mean age was 42.1 years. All studies reported the prevalence of anxiety among IBD patients while 9 studies reported depression among IBD patients. All studies provided statistically significant analysis for the difference of prevalence between the two disease categories (ulcerative colitis and Crohn's disease). Geographically, 5 studies were from Europe (4401 participants), 3 studies from North America (4970 participants and 2 studies from Asia (one study from KSA) (16725 participants). Table 1 shows the distribution of studies per country, number of participants and the prevalence of depression and anxiety among study participants.

Figure 2 shows the advanced analysis of the pooled data. It is shown that odds ratio is generally significant for IBD patients in all studies except for Yanartas et al [16].
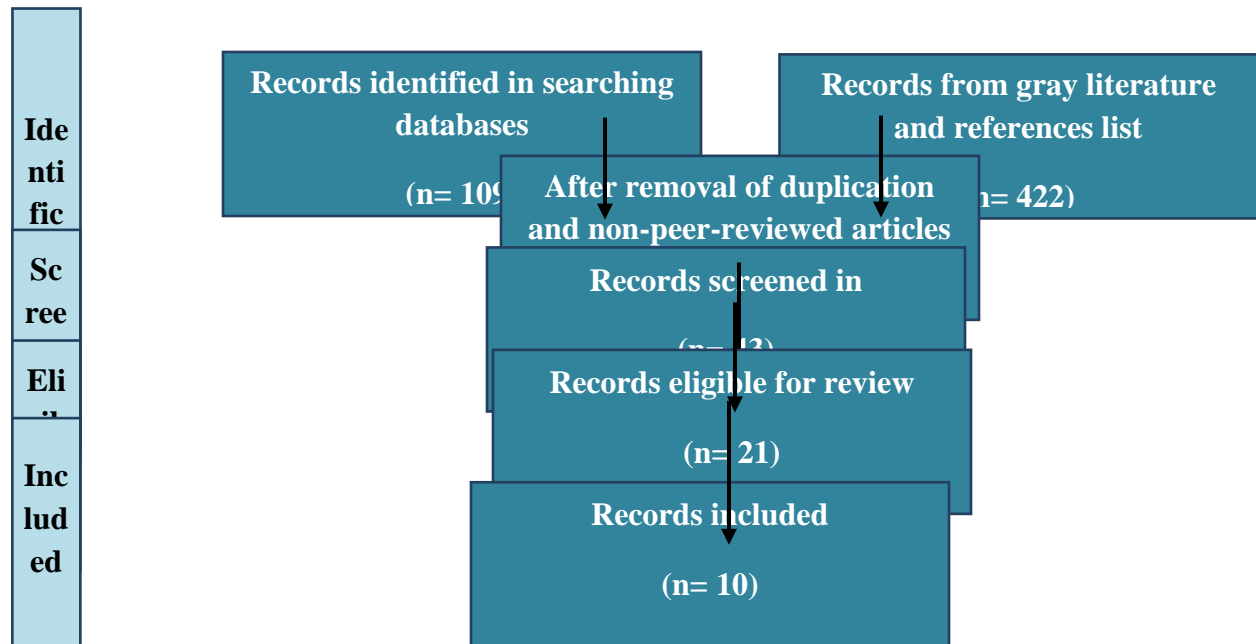
Figure 1:- Flow chart of selection process.

Table 1:- Characteristics of studies included in this systematic review.

Study	Country	Continent	Sample size	Scale	Anxiety	depression	OR	95%	P value
Mosli et al [15]	Saudi Arabia	Asia	1156	HADS	48.4	0	2.23	1.27-3.89	0.005
Yanartas et al [16]	Turkey	Europe	177	HADS	15	43.3	0.109	0.041-0.290	0.009
Brink et al [17]	Netherlands	Europe	350	CDI BDI	7.42	8.5	1.02	0.78-1.35	-
Choi et al [18]	Korea	Asia	15569	ICD-10	12.2	8	2.09	1.32-2.74	<0.001
Bernstein et al [19]	Canada	North America	242	HADS	17. 8	8.7	1.78	1.01-3.47	0.003
Nahon et al [20]	France	Europe	1663	HADS	41	11	2.85	1.79-5.68	0.004
Narula et al [21]	Canada	North America	414	HADS	30.2	30.2	3.36	1.51-7.48	0.003
Goodhand et al [22]	UK	Europe	204	HADS	24.3	28.7	1.6	1.1-2.4	<0.001
Mikocka-Walus et al [23]	Swiss	Europe	2007	HADS	56	48	2.74	2.3-4.89	0.0007
Kochar et al [24]	USA	North America	4314	PHQ-8	17.9	17.9	1.3	1.1-1.5	<0.01
Total			26097		5307 (20.3)	3475 (13.3%)	1.95	0.041-7.48	0.004
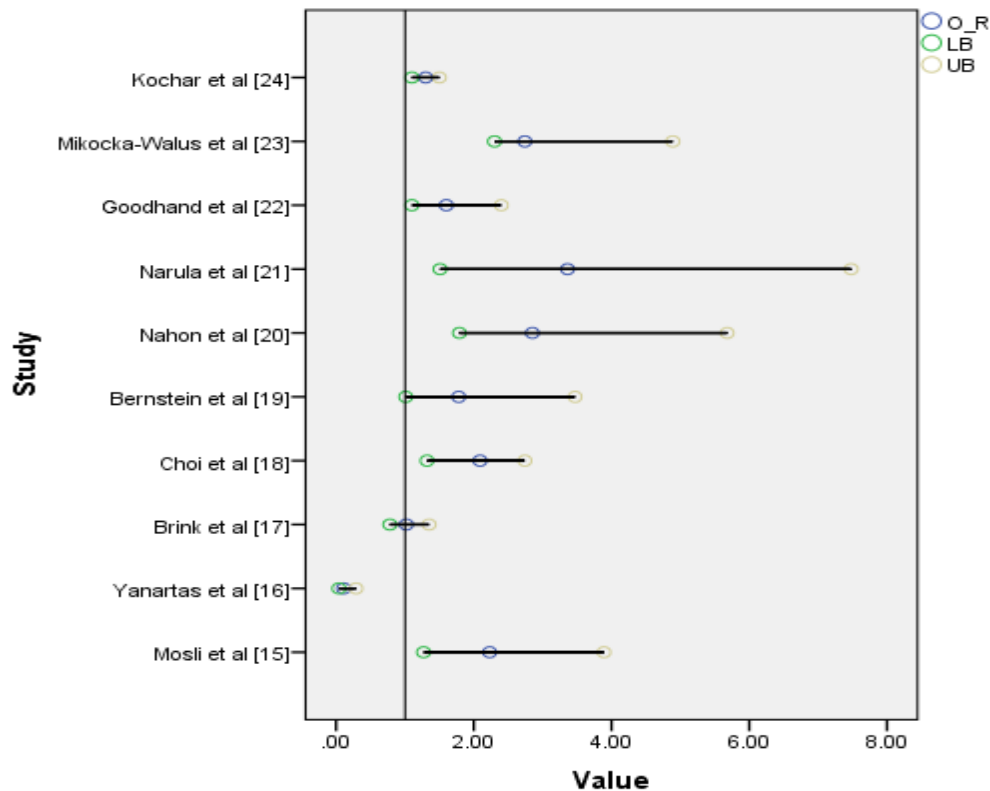
Figure 2:- Forest plot
OR: Odds Ratio; LB: Lower Border of 95% Confidence Interval; UB; Upper Border of 95% Confidence Interval

Discussion:-

According to a meta-analysis of ten studies, about 20.3 percent of IBD patients have anxiety and 13.3 percent have depressive symptoms, which is three to four times more than what is predicted in the general population globally [9]. As with depression, whether the illness was ongoing or in remission was crucial, with around 3/4 of patients in active disease experiencing anxiety symptoms. Even among individuals in remission, approximately one-third experienced anxiety symptoms. The studies that just looked at chart notes discovered a substantially lower prevalence; nevertheless, it is predicted that chart notes understate the incidence of anxiety since symptoms of anxiety may not have been treated during that office visit. Furthermore, only approximately 30% of patients obtain the right diagnosis of anxiety during an office visit [5, 11, 25]. Anxiety levels are comparable to other chronic illnesses such as diabetes [26] and COPD [27], but greater than cancer [21] and multiple sclerosis. [22] Anxiety levels in individuals with active IBD were significantly greater than in those with diabetes [26] or COPD [27].

There have been very few studies that have looked at various mood and anxiety disorders, making it difficult to make conclusions about their general incidence in IBD patients. Obsessive compulsive disorder (OCD) was examined in two investigations, with a pooled mean of 9.4 percent compared to a global prevalence of 2% [28]. One research discovered a prevalence of phobias in 7.4 percent of the IBD population, which is commensurate with the overall population prevalence [29]. Agoraphobia has a 1-year frequency of 1.6 percent in the general population [29], while one study that looked at agoraphobia in IBD patients discovered a prevalence as high as 23 percent. Two investigations looked at present panic disorders and discovered a prevalence of 1.6 percent, compared to one-year estimates for panic disorders worldwide of 0.9 percent [30]. These preliminary findings suggest that more research should be done to identify whether additional mood and anxiety problems are present at higher rates in IBD patients. These findings are congruent with the findings of a cohort study of IBD patients, which discovered a greater lifetime incidence of OCD, panic disorders, anxiety, and depression [31].

Many research simply provided a mean score for scale assessments rather than prevalence measurements, and the majority of these studies did not include a reference group. The positive skew in data distribution that is usually present makes it challenging to interpret mean scores in psychological tests without a reference group [32]. Because of this skew, a mean score above or below a clinical depression or anxiety threshold does not reflect the prevalence of the condition and may not even give information about the normal, or median, individual in the community. The mean HADS and BDI scores for depression were both greater than those for healthy controls. In order to give some helpful interpretation of the mean score values, we elected to compute the healthy means for the data we had available. This is not an ideal strategy, however, because the data supplied was restricted and did not reflect a thorough representation of all research groups. When it came to anxiety, IBD had a higher HADS mean score, although STAI anxiety mean scores were comparable across the two groups. Surprisingly, both mean scores were about 40, which is the individual cut-off for anxiety, implying that the healthy group had higher levels of worry than predicted. It is suggested that future research publish prevalence statistics based on recognized cut-off values when employing measures to evaluate mood and anxiety disorders.Mean scores would be more relevant if skewness statistics were given [32] and an adequate control group was analyzed.

The link between mental disorders and IBD is most likely due to a combination of variables. It is still debated whether anxiety and/or depression contribute to the onset of IBD or emerge after diagnosis [7]. Stress has been demonstrated to have an effect on intestinal permeability and immunological factors, both of which are key contributors to IBD [33]. Pro-inflammatory mediators seen in IBD may lead to sadness and anxiety, according to growing data [33-36]. Anxiety is likely exacerbated by uncertainty about the disease and prognosis, dread of surgery, and cancer risk [33]. Pharmaceutical therapies for IBD, such as corticosteroids and antibiotics, cause depression and anxiety side effects and may be contributing to the increasing incidence [7, 37].

Diagnosis of psychological disorders

Identifying psychiatric abnormalities in IBD patients at the time of diagnosis or during the course of the disease is closely connected to the patient's care, prompt beginning of suitable therapy, or improvement of the disease's result [23, 24]. Screening for and monitoring psychiatric issues in IBD patients is important in both primary care and specialty settings. To far, no IBD-specific measures for measuring anxiety or depressive disorders have been validated. Self-reported or clinician-reported techniques, as well as organized clinician psychiatric interviews, have been established for common diseases such as depression and anxiety [25].One method for determining anxiety and depression is to use current screening measures that have been proven to be reliable and effective, are simple to score, and can be recorded into electronic medical records. There is no substitute for a doctor's judgment, and all

positive screens should be connected to an action plan that includes additional patient evaluation and treatment [26]. It was critical that doctors and researchers knew the strengths and shortcomings of the different screening instruments, as well as how to interpret the results. The questionnaire instruments and cutoffs used to determine the presence of patients with anxiety or depressive symptoms varied [10]. The following are the specific characteristics of depression and anxiety symptom scales (Table 2)

Table 2:- A summary of the characteristics of the scales.

Scale	Items (n)	Total score	Cut-point	Sensitivity (%)	Specificity (%)
Anxiety					
HADS-A	7	21	8	90.0	78.0
PROMIS-A	8	T 38-81	T score 60	86.0	81.6
HAM-A	14	56	17	85.7	63.5
GAD-7	7	21	>10	89.0	82.0
Depression					
HADS-D	7	21	8	80.0	69.0
PROMIS-D	8	T 38-81	T score 60	82.3	81.4
HAM-D	17	56	20	86.4	92.2
PHQ-9	9	0–27	10	83.0	86.0
PHQ-2	2	0–6	3	97.9	67.0
WBI-5	5	25	<12	61.0	92.0

One of the study's shortcomings is the substantial variation between main studies for the majority of the outcomes. Our is most likely owing to a combination of variables, including the vast breadth of this review. This research includes data from 9 different nations, because the prevalence of depression and anxiety varies by region [8, 29]. As shown in this review, the prevalence of depression and anxiety varies with illness activity; however, the majority of studies did not segregate data based on disease activity. Another cause of heterogeneity is most likely related to the wide range of measuring methods employed to assess both depression and anxiety.The cut-off values for each scale were not consistently constant between investigations, adding to the heterogeneity in prevalence estimates. While several studies gave descriptive data on the drugs patients were taking, the influence of medications on the prevalence of depression or anxiety was not evaluated. In our research, adjusting for characteristics such as type of diagnosis, method of assessment, and disease activity did not significantly reduce heterogeneity, leaving unanswered the question of whether sources of heterogeneity in depression and anxiety prevalence can be found. Despite the considerable degree of variation, we discovered that the bulk of reported prevalence estimates (90 percent in both depression and anxiety) were greater than what would be predicted in the general population [8, 9].Another disadvantage of the research was that it only included publications published in English. The choice to omit non-English language research was made because of the cost limits of a non-funded study. Despite the exclusion of non-English language speakers, the study country of origin was diverse, with 5 from Europe and 2 from Asia.

Conclusion:-
According to this study, one-fifth of IBD patients exhibit depressive symptoms, and one-third have anxiety. According to an examination of 13 distinct worldwide recommendations on the management of IBD, only 10/13 of the guidelines covered any psychosocial concerns [39]. Only four of the guidelines recommended screening for psychosocial disorders and/or referrals for psychological care [39]. There was no mention of a technique for screening IBD patients for depression and anxiety in any of the guidelines. Based on the findings of this study, we believe that IBD patients should be evaluated for depression and anxiety using approved screening instruments. Future research should look at if other mood and anxiety problems are more common in this demographic. Future research should identify participant features that lead to greater rates of comorbidity in one study's prevalence than another, informing physicians more explicitly about which patients should be actively followed for mood and anxiety disorders. Inflammatory Bowel Disease patients would benefit from various therapies, according to research.

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