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RESEARCH ARTICLE

PARENTS' COMMITMENT TO THE CHILD'S VACCINATION ACCORDING TO AGE SCHEDULE: A SYSTEMATIC REVIEW

Dr. Najya Abdullah Attia[1], Dr. Faris Mohammadfowzi Marghlani[2], Dr. Abdullah Ahmed Ghunaim[2], Dr.Mashael Abdulghani Taj[2], Dr. Umkalthom mahmoud kissnawi[2], Dr. Khalid Abdullah Alzahrani[2], Dr. Faisal A Almutairi[2], Dr. Omar Mohammed Alzahrani[2], Dr. Naif Mohammed Alhamyani[2], Dr. Nora Ahmad Almuhainy[2], Dr. Ali Hussain Alarbash[2], Dr. Adeeb Bassam Manaa[3], Dr. Feras Awadh Alamri[3], Dr.Khaled Rajaallah Altalhi[3] and RN: Norah Bandar Albalawi[4]

1. Assistant Professor & Consultant of Pediatric, Department of pediatrics, king Abdulaziz Medical City, Jeddah, KSA.
2. Service Doctor, MD, KSA.
3. Medical Intern, MBBS, KSA.
4. Nursing Specialist, KKH, KSA.

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Abstract

Vaccine uptake may be predicted in large part by whether or not vaccinations are accepted. This has ramifications for public health since unvaccinated people are more likely to get illnesses that vaccines can prevent. Our purpose in conducting this systematic literature review was to analyse parents commitment to the child's vaccination schedule.We conducted a comprehensive literature search for studies published between January 2012 and present that used instruments to gauge vaccine-related attitudes and convictions. Included studies surveyed parents quantitatively to determine their opinions on paediatric immunizations. We compiled the data with an emphasis on how well the various methods of measuring hesitation performed. A total of 16 studies were included because they satisfied the inclusion criteria; 13 of these used a cross-sectional research design, 2 used a case-control study design, 1 used a pre-post study design. There was a wide variance in study sample sizes from 49 to 12,259. The PACV Survey of Parents' Opinions on Children's Vaccines was the instrument most often used. The Health Belief Model was the most popular theoretical framework. There was a broad range of questions designed to elicit opinions on vaccinations.The studies that polled parents about their thoughts on immunization utilized a wide variety of questionnaires. Validated and standardized but adaptable tools might enhance methods for measuring parents' perspectives on immunization. It is recommended that researchers in this field use a standardized set of questions.

Corresponding Author:- Dr. Najya Abdullah Attia
Address:- Assistant Professor & Consultant of Pediatric, Department of pediatrics, king Abdulaziz Medical City, Jeddah, KSA.

Introduction:-

Vaccination rates among children vary greatly among countries and regions, with probable context-specific causes [1, 2, 3]. Acceptance, which is determined by an individual's thoughts, attitudes, and beliefs regarding vaccination, is an issue of relevance to uptake despite the fact that availability to vaccination is a persistent difficulty [4]. Others who are entirely supportive of vaccination are on one end of the spectrum, while those who are sceptical of vaccine safety and avoid them altogether are on the other [5]. Lower vaccination rates among those who have doubts or questions [6] might have far-reaching consequences for immunization coverage and could make outbreaks more likely [7]. Under-vaccinated populations are at greater risk for more severe outbreaks [8,9,10] than are fully vaccinated ones.

Several surveys have been created and field-tested to gauge public opinion on the topic of vaccination [11]. The Vaccine Confidence Project [12], which gathered 65,819 answers across 67 countries [13], and the Wellcome Global Monitor 2018 [14], which gathered more than 140,000 responses across 140 countries, are the biggest recent surveys in the domain. Vaccine significance, efficacy, safety, and religious acceptability were all covered in both sets of questions.

Questions about vaccination attitudes and views are sometimes adapted for a certain country or region's environment when researchers use surveys to learn more about these topics. Validation strategies, including whether or not the items predict vaccine uptake, and the extent to which behavioral theories were used to drive the construction of the instruments used to assess these outcomes show wide variation. In addition, it is challenging to evaluate how attitudes and beliefs change internationally because to the great variety in how components like vaccination confidence are examined across various surveys [15].

Therefore, the main aims of our systematic review are:

1. To investigate to parents' commitment to the childhood vaccination schedule.
2. To assess the impact of this commitment on child's overall health.

Methods:-

Eligibility Criteria

- Studies including parents who has children.

Exclusion of:

Studies discussing questionnaires used to assess parents' awareness, knowledge, attitude and practice.

Study types

Randomised control trials (RCT), non-RCT, observational studies, case control studies. Case reports and case series were excluded.

Outcomes

Primary:

Assessment of parents' commitment to child vaccination schedule.

Data collection and analysis

Information was extracted from the included articles utilizing an electronic information extraction structure using EndNote software. Two reviewers freely extracted information, utilizing a standard information extraction structure which was created by the reviewers. 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: study design (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.

Search strategy
The studies were identified through search in PubMed, Cochrane library, Embase, Scopus, Web of Science, CINAHL and google scholar databases. Grey literature was also searched. Search was done and selecting only articled published in English language. Moreover, selected articles were chosen from peer-reviewed journals. In addition, the bibliographies of any qualified articles recognized were checked for extra literature and reference search was done for all included references utilizing ISI Web of Science. The selected period during the search was (2012– present).

Keywords
"Child" OR "Children" OR "parent" OR "parents" OR "father" OR "mother" OR "vaccination" OR "vaccine" OR "schedule" OR "child age" OR "commitment" OR "commitment assessment" OR "Systematic Review".

Study selection
Out of the whole list returned by the database search, one reviewer chose the most relevant titles. The abstracts of the remaining studies were reviewed first, following the aforementioned inclusion and exclusion criteria, after duplicates have been removed from the list using reference works. The second reviewer then categorized the research as "include," "unsure," or "reject". An impartial third party was contacted in the event of a dispute.

Strategy for data synthesis
Owing to the nature of the topic, there were scarce of published randomized and non-randomized control studies accessible as expected by researchers. In order to do this, we had two reviewers utilize a data extraction table to compile information on the study's design, population, inclusion/exclusion criteria, sample characteristics, methodology, and findings. This data was utilized to conduct in-depth analyses of the papers, from which appropriate conclusions were drawn to provide answers to the research questions. After assessing the title, abstract, and full text of the studies according to the eligibility criteria, the data of interest was collected using a standard form. The following information was collected:

1. Authors,
2. Date,
3. Setting,
4. Number of participants,
5. Level of commitment to the child's vaccination schedule,

Data analysis
The data that was recovered were entered into the Statistical Package for the Social Sciences, known as SPSS, and coded before a frequency analysis that was carried out in order to determine patterns of similarity. The content that is duplicated throughout the selected articles was organized into its own individual tabs so that it could be seen more clearly. The data was collected from the study that is considered to be eligible using descriptive statistics. After that, a narrative synthesis was constructed using the summaries of the selected articles. Forest plots was generated using extracted data entered to SPSS where needed.

Results:-

A total of 4570 studies were identified in the search, all of them were assessed for eligibility, and 16 articles were included in this review (Figure 1).

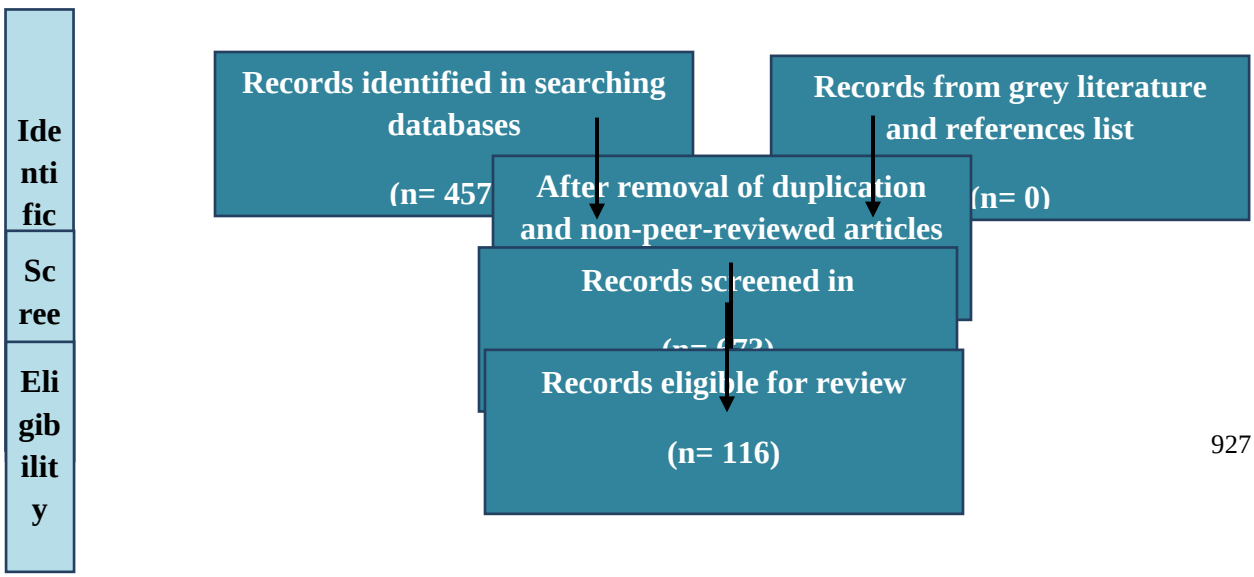

Figure 1:- Flow chart of selection process.

A total of 13 studies (81.25%) were included; all of them were cross-sectional in nature. There were a total of 16 papers included in the systematic review, and their sample sizes varied from 49 to 12,259 individuals, with a median of 455. Eight research (50%) examined parental views on paediatric immunizations in general, while five studies (31.25%) examined views on influenza vaccination (including pandemic H1N1 influenza). Three research (18.75%) focused on participants' opinions and attitudes about various types of vaccinations, such as those for polio and rotavirus.

Included studies were from 34 different nations (Fig. 2). The United States (n = 5) [16-20] and Canada (n = 3) [21-23] were the most frequent locations for research, while the United Kingdom (n = 2) [24-25] was the least common. Overall, the United States had the most participation (40,155), followed by Canada (7,200) and the United Kingdom (5,000).

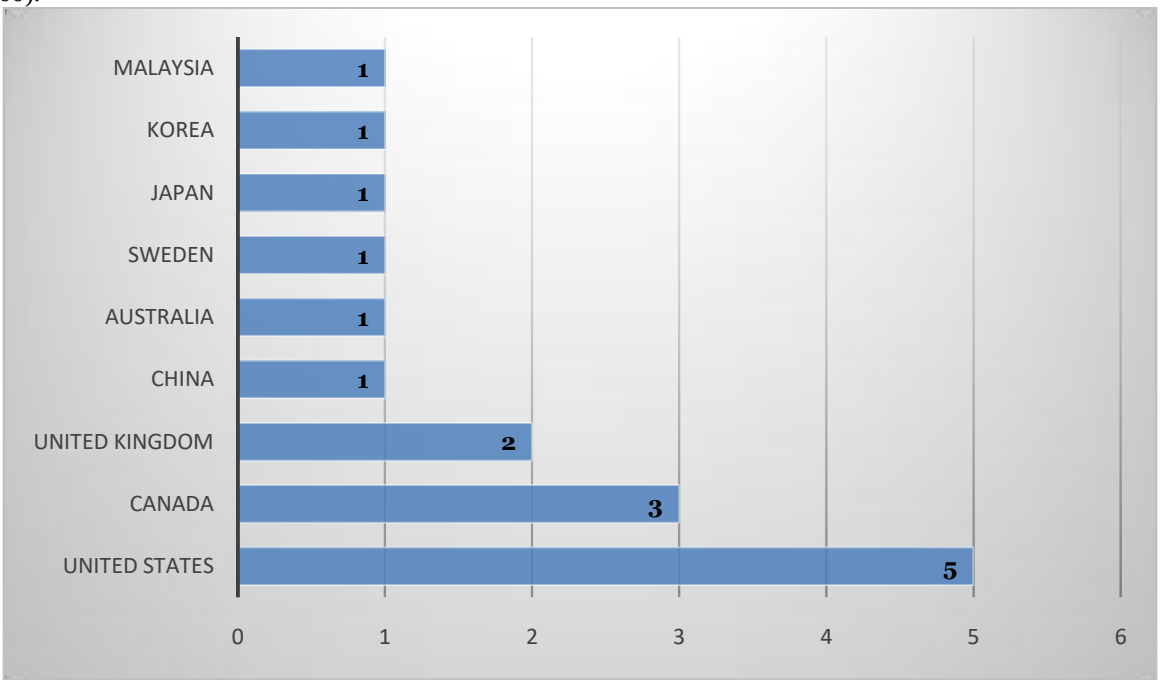

Figure 2:- Country Distribution.

Five (31.25%) of the 16 studies included questions on parents' vaccination preferences for one or more antigens. The research' individual questions were different from one another. Questions like "If you had another infant today, would you want him or her to get all the recommended shots?" "If my child was under the age of five, I would get a flu vaccine every year if it were free," and "If your child were offered it in the future, would you vaccinate them against swine flu?" were included. The percentage of individuals who said "yes" also varied greatly from study to study, making it impossible to generalize the findings.

Two (12.5%) of the five studies that surveyed parents about their plans for having their children vaccinated questioned explicitly about whether they planned to get their children immunized for all childhood vaccinations. One research with 200 American parents found a 75% success rate [17], while another with 54 Canadian parents

found a 98% success rate [22]. The proportion of parents planning to have their children vaccinated against influenza varied from 29% in a Canadian research with 236 parents [21].

Discussion:-

The views and opinions of parents on kid vaccinations have been the subject of a large number of quantitative research from a variety of countries. Few research mentioned utilizing a reliable survey instrument. The United States, Canada, and the United Kingdom led the pack in terms of the total number of studies undertaken, whereas most other nations had either none at all or a very modest number. Each study used a different approach to creating their questionnaires and included different questions, making it difficult to synthesize or compare the results. Using standardized surveys worldwide would facilitate the comparison of results from different nations and the monitoring of long-term changes.

Primary investigations were mostly done in North America and Europe, which is in line with a prior study on attitudes and views towards vaccination [5]. Standardized questionnaire tests showed no discernible pattern in the attitudes and beliefs that demonstrated the highest relationships with intention, and there was no significant variation in vaccination reluctance rates across nations. This finding reflects the limited sample size of research that employed standardized questionnaires rather than providing evidence of consistency in what matters most to parents expressing vaccination hesitation.

The validity of the questions used to gauge beliefs and attitudes varied widely across research. It is impossible to compare research since many of them failed to describe the methodology used to create the survey or questionnaire. Many research detailed their processes for developing questionnaires' constructs and items, saying that they relied on existing literature, consulted experts, or repurposed existing surveys.

To guarantee that items have content, construct, and predictive validity, a validated questionnaire should be used, and qualitative evidence is recommended for this purpose [32]. If a questionnaire that has not been validated is reused, it is possible that important information may be lost [18]. As there is no universally accepted benchmark for survey instruments, researchers were forced to draw on a diverse set of resources when designing their own. This process led to a considerable variation in the kind of questions included in the resultant questionnaires. The PACV Survey Tool is the most widely used standard questionnaire since it has been found to identify vaccine-hesitant parents in two separate situations and has been validated for use in this population. The questions in the questionnaire are broken down into three categories: "Safety and effectiveness," "General attitudes," and "Behavior" [68, 69]. We recommend that researchers interested in studying vaccination hesitancy utilize this questionnaire so that their findings may be compared to those of other studies.

Consistent with earlier evaluations [5], we found that the HBM was the most often employed theoretical framework to facilitate the production of questionnaires. According to the HBM, people's propensities to act are based on their own estimations of their own vulnerability, severity, benefit, obstacles, signals to action, and self-efficacy. The risk perceptions of individuals are emphasized in this model, as they are in others. All linked beliefs might apply to vaccine uptake as well as illness outcomes, complicating the use of the HBM. However, these models are limited in their ability to measure other factors—such as bogus contraindications, social influence, or access to services or vaccines—that, if addressed, are more likely to increase adoption [15]. Trust in vaccination is also a key feature in qualitative explanations of under-vaccination and the impact of vaccine safety concerns [15, 33-34], although it is seldom measured in models. The idea of trust is "ill-defined and a weakly measurable term" [35]. Measuring categories like as contamination and liberty have recently been brought into the discussion of the moral underpinnings of behavior [36, 37]. Additional research is required to integrate moral underpinnings, additional sentiments, attitudes, beliefs, and trust, and assess their robustness in a single model of vaccination behavior.

Standardized questionnaires on vaccination attitudes and beliefs and other obstacles or facilitators may be useful for future research in this field [11]. With the inclusion of questions tailored to the relevant environment, large-scale international surveys based on a standardized set of questions might be beneficial for making worldwide comparisons. Qualitative studies might complement quantitative survey data by taking into account regional specifics. Both methods of information gathering are helpful, but they need a lot of time and energy to report on.

The current measles outbreaks in the United States underscore the need of assessing and monitoring vaccination attitudes and beliefs. There were 1,148 confirmed cases of measles in the United States between January 1 and July

18, 2019. This is the highest number of measles cases documented in the country since 1992. Multiple states are experiencing outbreaks, and in Rockland County, New York, the majority of patients (78.4%) have not been vaccinated [38].

Because of the proliferation of the internet, both reliable news and false rumors may quickly travel across a community. This may outstrip the capacity of our present, labor- and material-intensive survey methodologies to assess and report on people's views and values. As a result of the delay, these approaches may not be able to facilitate the quick construction of evidence-informed and localized actions for debunking or minimizing the effects of disinformation.

Conclusion:-

Survey designs varied widely despite the fact that research on parents' views on children immunization were undertaken in at least 36 different nations. Validated and standardized but adaptable tools, in addition to qualitative research, might enhance methods to evaluate parents' attitudes and views concerning vaccination. A standardized set of validated questions should be promoted in this research domain so that longitudinal trends may be identified, tracked, and monitored using high-quality data.

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