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Research Article

### BRUE (BRIEF RESOLVED UNEXPLAINED EVENT) IN KSA: A CROSS-SECTIONAL STUDY

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#### Abstract:

**Background:** Brief Resolved Unexplained Event (BRUE) or sudden infant death syndrome (SIDS) is the sudden and unexpected death of an infant less than 12 months old. The research aimed to understand the background of the disease called BRUE and try to understand the reason behind the untimely death of infants.

**Methods:** The design that would be ideal for executing the considered research work is descriptive design. This is because the cross-sectional approach of methodology was used and for this reason, it needs a detailed assessment of the research perspective which would be facilitated by the chosen design. There are two approaches that are mostly used while proceeding with the research work and they are inductive as well as deductive approaches. In this case, an approach that is inductive in nature was utilized because this approach helped in developing new theories and understanding the perspective of the people regarding the disease called BRUE.

**Results:** Study included 515 participants. Participants reported that the most frequent physical factor leading to BRUE is defects in brain (n= 264, 51.3%). Some participants reported that they considered taking medications at infantile stage might lead to BRUE (n= 191, 37.1%). Furthermore, about half of participants reported that BRUE is not a common incident (n= 242, 47%). More than half of study participants cannot understand BRUE (n= 294, 57.1%). In addition, half of study participants believed that maternal factors could lead to BRUE (n= 266, 51.7%). Participants reported that age is the highest prone risk to BRUE (n= 310, 60.2%). They reported closely for both no overheating of baby's body (n= 249, 48.3%) and proper sleeping posture (n= 237, 46%)

**Conclusion:** This research aimed to learn more about BRUE and the causes of premature neonatal mortality. Some worried that giving their babies drugs may raise their risk of BRUE. Over half claimed BRUE is uncommon. Over half of research supporters disagree with the BRUE definition. 50% of participants felt maternal factors caused BRUE. Half of those surveyed didn't know whether BRUE is preventable. Two-thirds of the study participants felt sleeping awkwardly may raise BRUE risk.

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**INTRODUCTION:**

In infants less than 12 months of age, BRUE is the leading cause of death [1]. History, physical examination, and even a full postmortem and study of the cause of death do not help in the case of BRUE [1]. Birth defects, premature birth, low birth weight, difficulties during pregnancy, BRUE, and accidents are the leading causes of infant mortality (e.g. suffocation). The male-to-female mortality toll from BRUE is three times higher than that of all other causes in infants aged one to twelve months [1]. The peak incidence is two to four months with 95% of cases occurring by six months [1]. Midnight to 8am was revealed to be the deadliest hour [1]. Multiple factors [2] contribute to the risk of BRUE in certain newborns. Each component alone is not sufficient to induce death but when expressed in conjunction with one or more of the other elements will result in death [2]. Intrinsic, extrinsic, and extra risk factors for BRUE are all highlighted in the triple risk model for BRUE developed by Filiano and colleagues in 1994 [3]. Risk factors were classified into controllable and non-modifiable variables [4]. There is some evidence that a mother's knowledge, attitudes, and behaviors may help lower the risk of BRUE [5], according to a 2017 research of 35 African-American mothers. Religious conservatism prevents many researchers from doing studies on BRUE in the Kingdom of Saudi Arabia (KSA). As a result of Islamic law prohibiting such examinations of the dead, such options are restricted.

The disease called BRUE is a situation where the death of infants occurs and there is no such explanation for the death. It usually takes place at the time the infants are sleeping and also takes place usually in healthy babies leaving both the doctors and parents absolutely clueless [6]. This type of death is also called cribbed death because the infants are found to be dead in their cribs. Therefore, as this sudden death does not have any specific reason or explanation behind its occurrence, it is a matter of serious concern. The research aimed to understand the background of the

disease called BRUE and try to understand the reason behind the untimely death of infants.

**METHODS:****Study design:**

The design that would be ideal for executing the considered research work is descriptive design. This is because the cross-sectional approach of methodology was used and for this reason, it needs a detailed assessment of the research perspective which would be facilitated by the chosen design [7].

**Study approach:**

There are two approaches that are mostly used while proceeding with the research work and they are inductive as well as deductive approaches [7]. In this case, an approach that is inductive in nature was utilized because this approach helped in developing new theories and understanding the perspective of the people regarding the disease called BRUE.

**Study population:**

The population of the research work comprised of patients of those babies who have lost their child because of BRUE residing in the UK. The size of the sample would consider collecting responses from a total of 50 parents.

**Study sample:**

In this research work, the stratified random technique of sampling was adopted and implemented.

**Study tool:**

A cross-sectional study method was followed and therefore there was gathering of first-hand data. This was easily accomplished through the conduction of a survey and therefore as the tool for studying the research topic, a survey was conducted.

**Data collection:**

The first-hand gathering of data was successfully achieved through the conduction of a survey where there was fourteen multiple-choice questionnaires [7]. This helped in getting a widened knowledge about the chosen research topic.

**Data analysis:**

In relation to the present research work, the analysis that was executed was quantitative in nature. This is because results that was considered from the survey

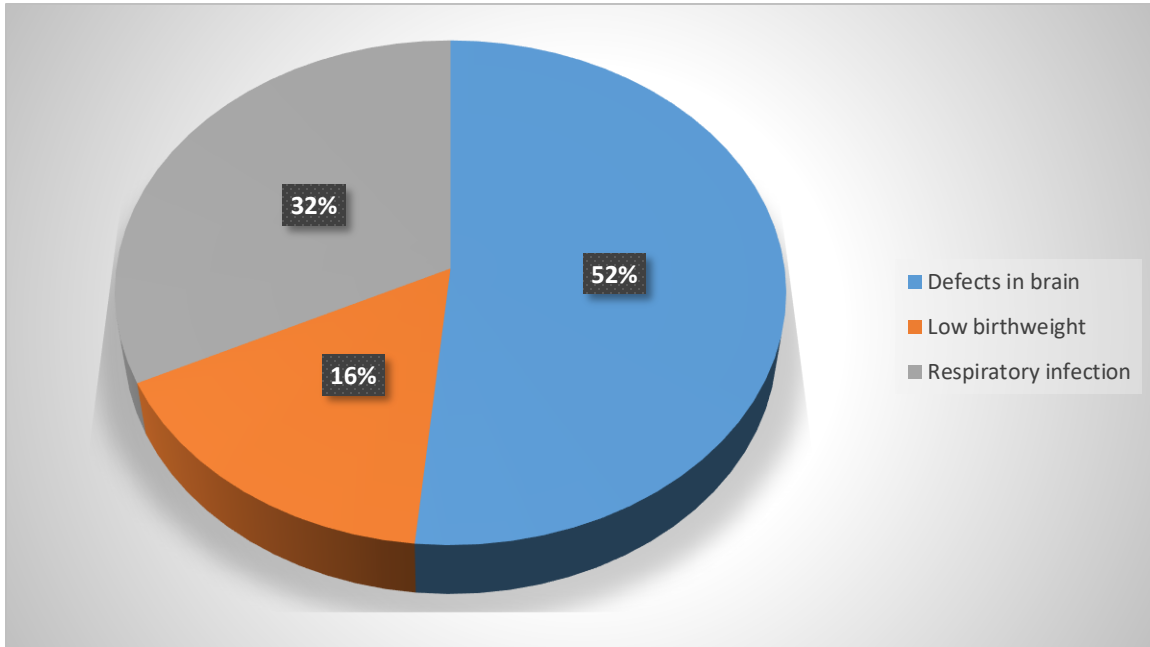
was better assessed through analysis that is executed quantitatively [7].

**Ethical Consideration:**

The ethical aspects of the research was upheld by keeping in mind that the privacy aspect of the sources from where data has been taken [7]. In addition to this, the privacy of both researchers and participants of the survey is kept safe and modifying no data.

**RESULTS:**

Study included 515 participants. They were surveyed with 14 questions. Participants reported that the most frequent physical factor leading to BRUE is defects in brain (n= 264, 51.3%). Other factors are presented in figure 1.



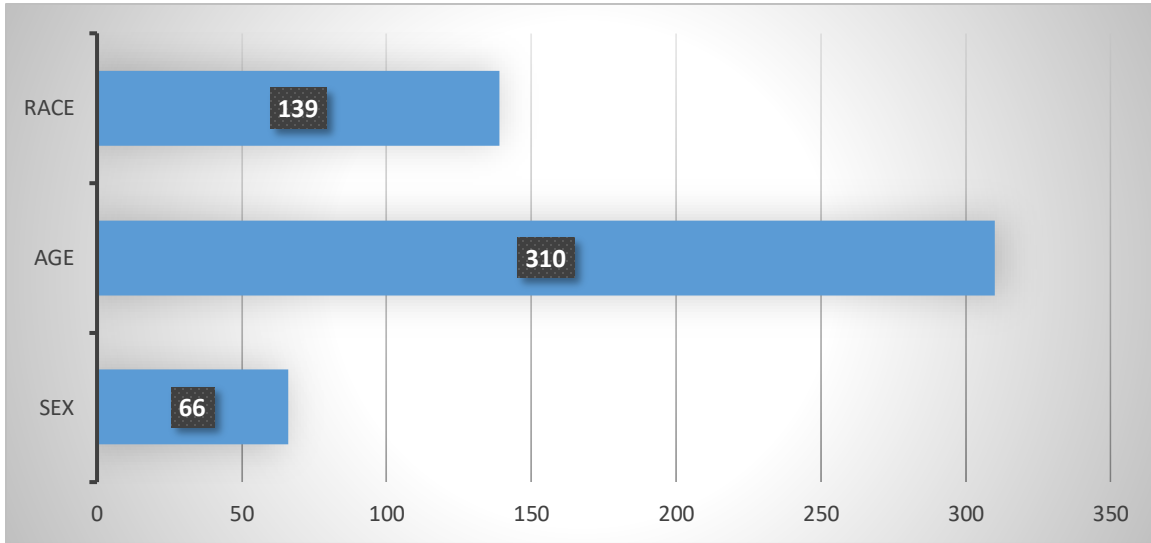
**Figure 1: Factors leading to BRUE**

Some participants reported that they considered taking medications at infantile stage might lead to BRUE (n= 191, 37.1%). Furthermore, about half of participants reported that BRUE is not a common incident (n= 242, 47%). More than half of study participants cannot understand BRUE (n= 294, 57.1%). In addition, half of study participants believed that maternal factors could lead to BRUE (n= 266, 51.7%). Moreover, half of study participants had no idea whether BRUE can be preventable (n= 271, 52.6%). Two thirds of study participants believed that sleeping posture can contribute to BRUE (n= 354, 68.7%). Other participants responses are presented in table 1.

Item	Yes	No	Neutral
2) Do you consider that taking medicines at the infant stage leads to BRUE?	191 37.1%	114 22.1%	210 40.8%
3) Is a BRUE common incident?	119 23.1%	242 47%	154 29.9%
5) Is BRUE understandable beforehand?	92 17.9%	294 57.1%	129 25%
6) Do maternal factors contribute towards the occurrence of BRUE?	266 51.7%	57 14.6%	174 33.9%
7) Can BRUE be prevented?	203 39.4%	41 8%	271 52.6%
9) Do you consider that the rate of occurrence of BRUE can be reduced?	365 70.9%	19 3.7%	131 25.4%
10) Do you feel that it is easy to reduce the rate of BRUE?	228 44.3%	97 18.8%	190 36.9%

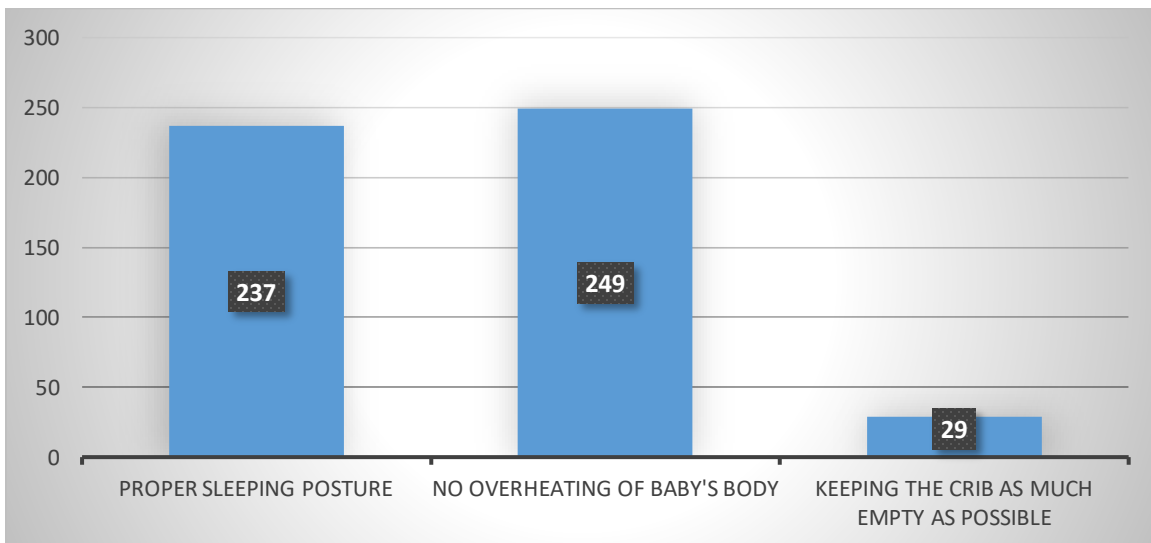
11) Do you think that medications can be implemented as a precautionary measure to reduce the chances of BRUE?	202 39.2%	122 23.7%	191 37.1%
12) Would you recommend the parents arrange for the sleeping of the babies in their own room to keep a constant eye on the baby during sleep?	377 73.2%	58 11.3%	80 15.5%
13) Do you consider that sleeping posture can contribute to BRUE?	354 68.7%	45 8.7%	116 22.5%
14) Do you feel that there are other ways to take beforehand precautionary measures to avoid the occurrence of BRUE?	334 64.9%	29 5.6%	152 29.5%

Participants reported that age is the highest prone risk to BRUE (n= 310, 60.2%). Other risks are presented in figure 2.



**Figure 2: Risks leading to BRUE**

Participants were asked about the preventive methods of BRUE. They reported closely for both no overheating of baby's body (n= 249, 48.3%) and proper sleeping posture (n= 237, 46%) (Figure 3).



**Figure 3: Preventive methods of BRUE**

**DISCUSSION:**

This research set out to understand the background of the disease called BRUE and try to understand the reason behind the untimely death of infants. It was found that some participants reported that they considered taking medications at infantile stage might lead to BRUE. Furthermore, about half of participants reported that BRUE is not a common incident. More than half of study participants cannot understand BRUE. In addition, half of study participants believed that maternal factors could lead to BRUE. Moreover, half of study participants had no idea whether BRUE can be preventable. Two thirds of study participants believed that sleeping posture can contribute to BRUE.

There is a study conducted to assess Saudi women's awareness of, and perspective on, BRUE [8]. Because of running the numbers, authors determined that a sample size of 384 was necessary for this investigation. The sample size was reduced to 363 since some observations were removed due to insufficient answers of the questions [8-9].

Participants from rural areas exhibited more awareness of BRUE than those from urban areas, suggesting a statistical relationship between a person's place of residence and that person's level of knowledge about the condition [8]. However, this finding runs counter to the findings of earlier research [10], which found that people in metropolitan regions were more knowledgeable. Numerous studies have shown that individuals living in cities are more likely to be well-informed about BRUE because of the abundance of resources available to them [8]. It is also possible that this is due to improvements in the infrastructure that make it possible for people to have access to information [10]. This distinction may also reflect disparities in traditional baby care knowledge between rural and urban populations [10].

A greater percentage of individuals with at least one child had better knowledge than those without any children, suggesting that having children may be a factor in one's general level of knowledge [8]. One possible explanation is because doctors and nurses discuss BRUE with new parents after the birth of their first child [11]. The proportion of participants with superior knowledge of BRUE was greater among those with lower levels of schooling [8]. Their comparatively small representation in the sample population may account for this outcome [8].

Eighty-five percent of those polled had heard that putting a baby to sleep on his or her back is best [8].

This remarkable increase may be attributable to the impact of medical education, both traditional and contemporary, on new parents, particularly women, by teaching them how to handle their newborns securely [11]. More than one child has been found to help new parents learn proper baby care [11]. Consistent with prior research [11-13], it was also shown that a greater proportion of adults with higher education levels understood the optimal posture to put a baby to sleep.

Participants estimated that 85.4% of the population is affected by BRUE [8]. This proportion often dropped as people aged. Understanding certain BRUE preventive strategies may have contributed to this result [8]. Included in these techniques is the understanding that newborns and parents should not share a bed owing to the danger of suffocation from adults sleeping on top of infants [8]. Similar findings were found in the section asking participants to report the number of children they had. These results jived with those of prior research [11].

**CONCLUSION:**

The purpose of this study was to learn more about the history of BRUE and the factors that contribute to the premature deaths of newborns. Some individuals expressed worrying that giving their infants medicine may increase their risk of BRUE. On top of that, over half of respondents said that BRUE is rare. Over half of those who support the research disagree with the definition of BRUE. Furthermore, 50% of the people in the research thought that maternal factors were a cause of BRUE. Half of the people in the research also didn't know whether BRUE is avoidable or not. About two-thirds of the people in the research thought that sleeping in an awkward position may increase the risk of BRUE.

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