REVIEW OF LITERATURE
CHAPTER- 2
LITERATURE REVIEW

Overview of studies should be an important part in the initiation of any studies venture. This facilitates to investigate what is thought about the topic and to describe technique of inquiry utilized in advance work together with the fulfillment and brief coming. It gives a wide information of the problem. It is an account of what's already acknowledged approximately a specific phenomenon. The principle cause of the evaluate of literature is to bring to the researcher about the effort previously executed and the awareness and thoughts which have been mounted on a scrupulous area of studies. Truly a chunk of lots of confusion, and no longer a listing recounting or shortening of all the previous findings after some other. Totally a property of the investigators who had carried out and gain that information as an outcome the effort made through the study.

The reason of the literature review is to carry to the reader preceding knowledge and records hooked up on a topic and their strengths and weaknesses. The literature evaluate permits the readers to be uploaded with the state of research in a field and any contradictions that may exist which demanding situations findings of other studies research. It help to expand studies equipment and to enhance studies methodologies. It additionally presents the information approximately the issues confronted with the aid of the preceding researchers while reading the equal areas of studies. The literature evaluate may be done for distinctive purposes the usage of exclusive methodologies. Therefore on the premise of purposes an methodologies, literature assessment would be labeled as conventional ,systematic, meta analyses and meta synthesis.

Researcher not often behavior research in an intellectual vacuum. Researcher typically undertake a radical literature assessment to familiarize with a understanding base. An intensive literature overview gives a groundwork to get support or reliable evidence and usually is carried out beforehand with such information be accumulated. The evaluation of literature ought to present facts and findings within the tentative language that befits clinical inquiry and should bear in mind to become aware of the assets of evaluations, points of view and generalization of the research findings. It facilitates the researcher to gain perception into numerous aspects of
trouble regions in formulating the framework for the observe, developing method, constructing tool, deciding plan of analysis and for the discussion of the locating.

The study's purpose was to evaluate about PSC and its utilization on various health professional's knowledge and practice in selected hospitals, Bangalore, Karnataka.

Considering the study and objectives a detailed literature search was done. This chapter presents many support study related to the research undertaken.

The following ways ROL are arranged.
1. Studies related to the knowledge about placental stem cell and its utilization
2. Practice related studies about placental stem cell and its utilization
3. Prevalence and incidence
4. Review on cord blood banking and transplantation

Studies related to the knowledge about placental stem cell.

Lee K.P, Lau EY, Sumertin TS, Kim JH (2019) study on CB. By using the self administered questionnaire, the data was collected. 147 nurses from both the sectors were conveniently selected. The outcome indicated that good idea about the CB among the subject. Only on the part of money, issues and other matter related were lacking. Hardly 10% got some amount of educational program on this topic. The obstacles were the unsupported health team, busy work, lack of system format, etc reduce the subjects to involve more in educating the women attended the OPD.

Jawdat D, et al (2018) intended to study about the assessing the awareness on CBB among public. 1146 subjects were chosen for the study. The test was administered and the data was collected. Maximum of the participants were girls. The study finding revealed that 52% had thorough knowledge on CB, remaining had found to be unaware about the CB. The study concluded that there is a need of some kind of educational training for the health care providers so as to able to give accurate information about the CBB.

Armstrong AE (2018) study in UCB collection and banking. The study aim to develop the understanding amongst health provider that the need of improvement of the private and public banks to accumulate and stock up stem cell. 26 question electronic review was utilized to gather data from general and subspecialty paediatric supplier. 473 suppliers finished the review, just 22% of suppliers at any point examined about umbilical CBT. The maximum share reacted on banking of own CB accumulation transplant be demonstrated into threatening of seventy three percent
and non-harmful sixty one %. The investigator uncovered that providers practising under 10 years will probably address about stem cell, while more youthful and female general professional were fundamentally more outlandish. The study concluded that health supplier once in a while address families about SC collection and it is trust so as to well educated of present scenario usage of CBC.

Faivre L (2018) study on associated factors of umbilical CBC quality and to identify with the biological factor. Considering 30 years UCB is well thought out to think for the source of use. The investigator locating revealed that improving the first-rate of harvested CB as a minimum in term of volume and amount of cells will reduced the variety of discarded units. It was concluded that there is need to enhance the knowledge to allow the concentrated on donors that could offer better outcome and also have a good collection for cells.

Hannan M.M.Tork, et al (2018) study on knowledge and attitude about health care provider regarding stem cell. 250 fitness care vendors taken from 5 important hospitals in Qassim, inclusive of docs, nurses, different fitness vendors including other department like nutritionist, etc. Self-administered tools was utilized. The locating confirmed that most of the them less than 30 years were girl and below 10 experienced. Approximately 56% had moderate knowledge and 31.2 % had good expertise. 191 (76.4%) of the contributors shown tremendous attitude closer to SC use. There it was concluded that the slight margin understanding and positive attitude closer to SC and utility amongst health care provider, the study endorse that academic packages on top of SCs ought to be evaluated for enhancing this cells expertise or promote a extra superb mind-set.

Strong A, Gracher T, Chen P, Kapins K (2018) study aim to understand the cord blood public domain banking on their operating system. The study reported that the value of the amount received from such investment is reducing. It concluded that in such big country like US for running such a centers, the governmental support is utmost necessarily.

Rajendra S, et al (2018) study on SC is required for treating many health problems. 428 women were assessed from 2012-2017 by questionnaire on the area related to SC banking. Maximum were unfamiliar about the concepts. They thought that it is for the metropolitan people who have money, goes to corporate doctors and they can only do banking. Through this it was understood that information had to be
completely share to such population and they also have the right to know the importance of UCB collection and their future utilization.

**Mistry, AA (2018)** aim to assess the knowledge of obstetricians and pregnant women in UCBB. Sample was 200. The information was gathered by asking questions. The finding revealed that 30 of health personnel thought CB can be used for limited diseases. 63% have some idea about this topic. 76% were not sure of how the utilization happens. Some cultural taboos also plays a role in storing of CB and objected to do so. The study concluded that UCB collection needs to be aware by medical personnel.

**Patyal N, et al (2018)** intended to evaluate on maternity staff knowledge and attitude regards to SC and UCBB on nurses. For the study to carried out, almost 170 labour staff who made the inclusion criteria were taken in consideration. The information being gathered through items on this variables i.e Likert scale and questionnaire. Result revealed that only twenty eight percent had little information. But between the two variables relationship exist.

**Matsumoto MM, Dajani R, Mathews KRW (2018)** reported a survey done on 899 lady using prepared items in OPD in that 464 from private and 435 from public set up. The finding indicated that the patients who came to private hospital had good communication and update information about CB and it indicate that they will go for the banking also. Some factors like partners willingness and culture can play a hindrance if not coming forward. It concluded that such study helps the government to plan for the public sector to do UCBB.

**Kalynychenko TO (2017)** reported a good changes in the system of CBBB and the improvement in performing the procedures. In this study the activities carried out worldwide and nationwide are being assessed. Mainly on the transplantation, banking system own SC uses and donor cells application and very important on the aspects of quality in doing the step. Such activity can help the public to have a good facilities on the part of receiving treatment out of UCB cells.

**Sudhanshu Kumar Das, et al (2017)** study on Healthcare Professionals knowledge regarding Cord blood banking in present scenario. The study aim to discover the understanding among healthcare professionals about the UCBB and its benefit and affordability by its longevity or viability in recent period. The design used in the study was a cross-sectional research design to carry out study among 100 health care professionals; who attended OP clinics of OBG and pediatrics in NRI
medical college and general hospital, using questionnaire with total questions of 20. The results were tabulated and analyzed by chi-square test. The finding revealed that among 100 health professionals, 67% were aware of UCBB and remaining (33%) were unaware. Among 67% aware health professionals, 20% (14) people were telling expensive but affordable and 62% (41) about useful but not necessary now. Out of 33% people, 23% people were agreeing that it is very useful and 60% expensive. The conclusion is that healthcare professionals need to improve awareness with respect to knowledge, concerns in gathering and keeping of CB and to recognize space existing, so that accurate advice to expectant parents be given to aid their decision.

**Sibel Ozturk (2017)** to determine the Turkish mother's on CB and system of banks. 322 women between the ages institution of 18 to forty nine years had been decided on from 5 number one health care centers. The facts changed into collected with the aid of questionnaire form. The finding found out that 29.8% of moms had thoughts on CB and SCs and had used for medicinal cure. Around seventy five cent of lady had no thoughts concerning UCBBs and 21.1% had expertise from internet or other mass media. The study concluded that know-how degree of women accelerated, they were given improved in accord with their qualification as regards to attitude. It turned into decided that most of them did no longer have sufficient know-how about either stem cells or UCBB. Consequently midwives play an crucial function to cope with this problems. Therefore, there was essential to get oriented on those problems all through conceiving process and comply with-ups.

**Ibrahim NO (2017)** study to examine the health care practitioners on the duration of cord blood clamping in present set up. 82 obstetrician and 75 midwives have been the sample. The design used was a cross sectional survey research design. Information was accrued with the aid of dependent questionnaire from 5 tertiary hospitals in Riyadh for the duration of might also to October 2016 via convenience sampling. The general public of the respondent had been elderly 30 years or older 84% were woman. 66% had been non Saudi, with academic level of bachelors grade or superior as seventy two cent. Best forty two cent said the lifestyles of UCB collection strategy in their performance, out of that thirty eight percent revealed the lifestyles of a hard and fast duration taken for UCB when the neonate became time period and wholesome and handiest 32% had the baby not completely mature . The study concluded that majority of the obstetrician and
midwives that participated had a positive notion towards UCB collection and express that a loss of present UCBC collection hints of their organization.

**Nisha Philip, et al (2017)** to evaluate the effect of informational handout on the understanding and outlook of AN moms concerning UC stem cell banking. A quasi experimental studies layout was used. 60 antenatal mothers have been recruited by means of non possibility purposive sampling technique. Statistics changed into accumulated the usage of items and was statistically ruled out. Information publication primarily of UCB turned into found out. The end result showed that 75% had common expertise, 13% shown poor information. Neutral was 70% but post test revealed 50% of AN had average know-how. The antenatal mothers i.e 65% had exact mind-set and different 35% had impartial attitude closer to umbilical cord stem cellular banking. Common understanding and mind-set score expanded after the post take a look at, the null speculation become rejected. Statistics guide be accept as substantially valuable to enhance knowledge concerning bank on UC. Affiliation understanding the mind-set for pregnant lady decided can changed the use of fishers exact take a look at. Not one of the demographic variable became determined to have full-size affiliation with know-how and mindset of antenatal moms. Effectiveness of the informational guide become additionally evaluated to understand the final results of the intervention.

**Bhandari R (2017)** conducted a study on knowledge of CBC and the outcome on bank. Using survey questionnaires, attitude, and frequency and providers opinion on umbilical cord collection that caters to minority ethnicities insignificant others. The study revealed that there was unawareness about the CBC and nervousness concerning the endowment and helpfulness of stem cell among parents of all the age group or at any kind of educational status. Mothers beliefs on the medical personnel for the awareness or guidance. 54% health care providers reported that it is a time constraints to discuss cord blood collection at prenatal visit. The study concluded that health care providers should be dedicated to disseminate the information regarding UCB collection so that the parents donates more stem cell and increased the supply to the public cord banking.

**Gupta V.G & Bakhshi. S (2017)** study on transplantation where it aim to understand about using a HSCs as a regime where can be used to oneself or from others. Demand increased in this area but the availability of the right matched cells
are lacking. Many constraint on the part of money, people, study, place to make the facilities accessible to any kind of population. So the study concluded that HSCs for treatment especially in children faces lots of problems and it should be addressed.

Rao I. (2017) study on expectants about SCs. Using likert and questionnaire, the information were collected. The findings revealed that they have a lack of knowledge on this aspect and wanted to know much about SCs. On contrast those who have information have better attitude. The study concluded that women used to have proper idea about this concepts and more updates on it.

Joseph A & Abhirami P (2016) Study aim to evaluate and associate the level of information in the utilization of placental stem cells. Design was one group pre test and posttest. The sample were 50 nurses. Finding indicated 86% lack knowledge and there were no one who had the information on placental stem cells before the teaching. After the intervention the posttest shown that 88% improve knowledge and any of the group had doubt on the topic. The conclusion is that such kind of teaching has lots of important on the part of nurses to update their skill and practice to overcome the current scenario.

Lye Jee Leng, et al (2016) study on association between nurses understanding and approach on SC application in medicine. Goal of the study determine association between nurses understanding and attitudes closer to the software of SCs in remedy in a tertiary coaching clinic. The researcher used a cross-sectional design to look at turned into hired on ninety seven nurses skilled in midwifery and neonatology by means of random sampling approach using a self-administered questionnaire. The result showed the most of the nurses 86.6% surveyed had a slight expertise approximately stem cells in remedy and more than half 60.8% of the nurses exhibited a high quality mind-set towards the healing potential of stem cells in medicine. There was a statistically great distinction in total expertise rankings and nurses medical operating experiences (p=0.003). Finally it comes to the conclusion that majority of nurses showed a high quality mind-set toward the usage of stem cells in medication. Implementation of an in-service academic programme ought to be promoted to beautify the effect of expertise and attitudes on stem cellular application to healthy modern-day fitness care desires.

Amira Mohammed Saed Mohammed Khalil & Sabah Mohammad El Sayed Sharshor (2016) study to assess nurses knowledge, focus and mindset closer to software of SCs remedy in youngsters. Descriptive was the design. The
observer selected the setting in the pediatric intensive care unit and pediatric hematology and oncology branch Tanta university predominant sanatorium, Egypt. Three tools have been used by the researchers to acquire the necessary facts. All nurses who work in pediatric in depth care unit and hematological department were included within the have a look at. Established interview sheet to evaluate nurses’ expertise about stem cell therapy. The findings result revealed that nurses stem cellular therapy awareness evaluation sheet and nurses mindset towards stem cell remedy assessment sheet showed that 69 % lack in know-how and they recognized from their point of view that the expenses of the stem cells, rules and processes are barriers of accomplishing such new generation of their hospitals. The study concluded that nurses degree of information about stem cells is insufficient and this suggests the need of advent of educational applications and persistent schooling concerning using stem cellular.

**Tuteja M (2016)** study also indicated that 100 persons from overall populace, one hundred clinicians from various department were decided on within the observe done among August 2013 to November 2013. The locating discovered that 50% of the scientific specialists and 82% of the overall populace did not realize any indication or have been not aware of the proper indicators of using CB. 42% popular populace and 37 % medical professionals notion that UCB stem cell may be used to deal with genetic problems and 19% notion to deal with for thalasemia within the same toddler. The results concluded that the presumption of CB should not be carried as a wrong information to spread among general population. There may be a need for the obstetricians and pediatricians to play a crucial function in giving the perfect in sequence to might be mother and father to assist on UCBB to confirm about their choice.

**Venugopal A, et al (2016)** intended to know about UCBB. Design was cross sectional survey. 50 staff nurses from Maternity unit were in the study. Assess the variables by attitude scale and questionnaire. Analyzed shown 42.88% had good knowledge and maximum of 48.6% had neutral. The training classes regarding UCBB had not been organized so far but few had assisted is doing the procedures or seen UCB collections. All were from delivery section. The knowledge and attitude scores were relating each other. So it brought out the necessarily of proper banking on the CB.
Pandey D (2016) study to decide consciousness about banking of UCB and also to assess the current mind-set for a trial populace capability donors from considered among major prospective umbilical cord blood storage area. The existing observe records will help the fitness professional to improve the patient training and optimize the use of the services. It also showed that greater than half of the individuals expected that the obstetricians ought to play an vital function to tell them regarding UCB and 1/3 of the contributors had too much hope from banking of the UCB. The findings was that obstetrician had an energetic position in explaining the sufferers concerning professionals and cons of UCBB.

Hend S Mohammed, Hend EL Sayed (2015) study on awareness and outlook of maternity nurses regarding CB collection and stem cell. The main goal being assess expertise and mind-set concerning CB and SCs on the part of midwifery staff how a teaching intervention helps them to gain knowledge. The design changed into used was one group pre and post test. 53 body of workers nurses were included. The study became performed in settings of the hospitals. Data were gathered by researcher form items on the variables and staffs believe on the topic concerns. The outcome discovered lack in information in eighty eight % of them prior in providing teaching programme . 90.6% and 82.2% of them had exact know-how at once and after 3 months of intervention respectively. The studied nurses (1.9% ) had high quality mindset closer to CB or SCs beforehand to manipulation, right away and after 3 long duration months gap the high quality mindset altered as sixty cent and 69.8% correspondingly. The study concluded that execution of an instructive intrusion was efficient and drastically enhanced them understanding and mindset closer to CB collection and stem cells. The output endorsed with the intention of appropriately deliberate in-carrier schooling packages associated with CB or SCs should installed to expand staff understanding and mindset towards CBB.

Manal Farouk Moustafa & Entisar Mohammad Youuness (2015) study on nurses knowledge about UCBB and its Barrier. The researcher have a look at purpose to assess nurses understanding regarding UCBB and figuring out the boundaries of it to be implemented as their guide is essential to the achievement of improvement and functioning of CB banks in women's fitness sanatorium, Assiut university hospitals, Egypt. A descriptive design was used. Through reviewing study, fact had been accrued from a hundred and fifty nurses with the aid of the usage. The
locating confirmed that 79.7% are missing in expertise and that they recognized that the fees of the UCBB, guidelines and procedures are boundaries of carrying out such new technology in their hospitals. From the above findings, it was concluded that nurses' level of know-how on UCBB is insufficient and it indicated the necessity of introduction of instructional applications and additionally nurses should be prepared to recognize the accredited requirements and knowledge of UCBB. The study concluded that nurses of the look at have a lack of understanding about UCBB from the clinical evidence to support the exercise that permits the conduction of such unit of their hospitals. Providing UCBB calls for that nurses have specific information and abilities, a supportive surroundings, ok nursing staffing, implemented polices and collaborative relationships most of the health care group within the lifestyle of the girls fitness medical institution.

Indumati, et al (2015) intend to find the effectiveness of SIM on nurses knowledge. The study was quantitative in nature. Pre experimental design was chosen. 30 nurses were preferred by non probability conveniently way. Using questionnaire, information were gathered. Result revealed that 73.3% had no idea about CBB. After the teaching session value shown as more than table value. It clearly interpret that the SIM was helpful to improve knowledge.

Armson BA (2015) study to analyzed by way of the use of the published literature through Medline and pub med from Sep 2013 the usage of suitable managed MeSH terms and keywords. The researcher used the standards defined document project and was analyzed. The findings revealed that health care expert ought to be nicely knowledgeable approximately the CB collection, storage space and various factors that affect the amount, nice and capacity to acquire a CB units. The study concluded that fitness care experts worrying for ladies who are deciding on personal banking have to reveal any financial aids or capacity conflicts of interest. Pregnant ladies must be provided with independent statistics about UCBB options, inclusive of profit and limits set by both the banks.

Ginori E, et al (2015) the study reported that the survey done had revealed about the UCB storing technique. Maximum shown positive and needed information on how to gather all the updates about banking on CB. There required an attention on the part of health team to make the public realize the importance of SCs and its application.
**Hatzistilli H (2014)** study on health professional knowledge and attitude towards the UCB donation, Greece. The goal of the study became to observe the fitness experts understanding and mind-set concerning umbilical cord blood collection and its utility. 109 health specialists from three provincial hospitals and 2 hospitals in Thessaloniki were given established questionnaire. The study have a look at turned into performed from April 2012 to May 2012. The participants had been 23.9% physician, 34.9% were midwives and 34.8 were nurses. The result discovered that 15.6% of the health professionals had slight understanding on the gathering strategies and the utilization of the UCB. 89% of the fitness professionals had less understanding. The need of continual education had been declared to be a vital needs. 93.5% of them declared that during the ultimate five years obtained no or little or no training concerning the collection, storing and transportation of UC collection. It come to the conclusion that the information of the health professional on UC collection is insufficient so there is a need of advent and reinforcement of powerful packages of continuing schooling with using era like net. Health professional are considered by the public as the most realistic supply of information just about UCB.

**Karagiorgou LZ (2014)** study to decide Greeks opinion about UCB, perceive the approach for the dearth of drive to contribute UCB and permit expertise to set up higher enrollment marketing campaign in order to increase the number of providers. The findings revealed that 48% of the respondents knew approximately the UCB and had complete know-how approximately what garage/donation gives. Others result anticipated that media (35%) and docs (25%) have been the primary supply of records. The information from the kingdom turned into considered both insufficient or nonexistent by using 85% of the respondents. The study concluded that the respondents need facts about UCB from each the nation and marketing campaigns by means of the ministry of fitness and social cohesion.

**Roh EY (2014)** aim in analyzing the medical personnel perceptive of CB. Sample were 57 and data was collected from one particular place by questionnaire. The report indicated that 82.5% had exposed to CBB for last 2 couples of years. Mothers were informed about the procedure of collection, storing and banking system etc. 50% of them were unaware of ethical issues and the protocol which is to be followed. Again half had knowledge on the part of transplantation. So conclusion
was training and management strategies can be a support system for the health care providers.

Masaoka N (2014) reported to determine an improvement of UCB sampling using a new trial apparatus. From 100 normal case fact were acquired. In that 50 were changed into excited by the conventional methods. Every other half instances, responded to used a product by some company. So it was compared between them. Out of that 10 cases in every organization had been matched by way of sampling quantity; in addition got to know that the wide variety, awareness of all this cells found to have some growth of organism. The end result discovered that there had been no sizeable variations inside the first-rate of UCB between the two businesses. The study concluded that sampling bag after clinicians have come to be aware of the test UBC, such approach force a beneficial way for accumulating for not related CBT.

Page KM, et al (2014) study used method to find out the ways public bank are performing in this process of work and was analyzed. Among accumulated through knowledgeable employees, had been processed using widespread approaches. Regular satisfactory and potency metrics put up processing trendy nucleated mobile depend had been correlated with all series trends. The study concluded that figuring out first rate CBUs collection. There needs a high alert to have from the child born earlier than the term and the whole procedures should be carried as per the protocol so that maximum utilization can be made. The existence of racial in this effort should exist.

Bahl, A & Bakhshi S (2013) Study on the quality of CB and its utilization. Throughout the country ,many centre for the collection and keeping so that it can be used for future. The study findings revealed that many treatment from one CB can also without any problem to the recipients and the donors. As of now, our country is on the top in the aspects of CBSCs as our population is huge and variety of gene. The study concluded that banks in both the sectors should play a crucial role in concentration on any problems. Moreover the health care should work as a team on providing information for the coming years to meet the needs.

Revencu T, et al (2013) study on UCB. The best rich amount of MSCs and HSCs are found to be present ,can be very well use for treatment. The study revealed that facts carried out from 50 CB samples. Here the cells are being separated and put in
a chemical for the proper usage. So whatever required are being taken out and the assessment are done on it.

Mahantesh S (2013) through a survey method study to analyze about cord storage on pregnant lady. The sample size was 100 women in outpatient, confirmed with pregnancy. A probability randomization was the way to gather subjects. Regarding the data collection, an attitude scale combined with the developed questionnaire had used to get the data. The result suggested that there was a very negative feeling about the storing of cord. Hence the study brought out the necessity of health personnel to play a vital role in heartening the potential category to know more about the CB and thereby progress the donation of CB.

Parco S (2013) study on public banking of UCB. The observer turned into to evaluate the alternatives expectant have with appreciate both sectors and motives motivating the selections. From the total count of 3450 women, 772 agreed to this test. The remaining 221 are like from different non-ECU nations. So association was collected and test have been completed. The end result found out that ladies of approximately seven hundred and seventy two, eighty four percentage able to reach bank for all the people and 124 used private charge-primarily type machine. Out of the 3450 screened for syphilis by using variety of test, the primary checks achieved half of general instances due to the fact many OBG observe olden style of doing the things. The findings recommended that inside the system of doing a particular procedures, there is no protocol to be followed. The study concluded that the chemiluminescence technique was extra explicit.

Sandeep SY (2013) a study done to estimate the application of structured teaching programme on paramedical pupils on SC therapy. All the students taking up paramedical in the particular college were the sample. By using the interview technique, the data were obtained. The obtained value shown that the result after the STP were better in all the area of assessment. So there is a need of more educational and awareness programme that can make this group more acquaint about the SC regime and thereby perform well.

Chakrabarty. P, Rudra S (2013) study on UCB. The placenta and cord was being thrown as a dirt or the mess after child to make the childbirth area sterile. But recently the need for red cells by a less hemoglobin baby has dramatically increased. The present of high level of HPCs cells make it possible for the uniqueness of such cells. The scientific findings has found that how long SC are
stored, changes of any chemical factor is found to be declined. Eventually, it come to conclusion that the cells can be used in future for longer time. There was an application to the child born prematurely. The effectiveness was seen in such baby. The study concluded that the requirement of SC in any period of time for treatment will surely gives a signal to this.

**Aswathy KS (2012)** aim to study the knowledge of nurses on UCB collection, preservation and utilisation by using structured questionnaire. 40 sample were analysed which was selected by purposive technique. The design was quantitative, pre experimental one. The outcome revealed an improvement in the skill after the teaching programme. So it clearly explained a training need programme should be as a part of their daily activities.

**Li D R (2012)** study on MSCs. The goal of the study was to have a look to summarize the strategies of segregation, growth, differentiation and maintenance of individual UC with MSCs, for complete information and sensible use in preclinical research and medical trials. All of the literature reviewed changed into posted over the past 10 years and is indexed in pubmed and Chinese National knowledge infrastructure (CNKI). The result revealed that explants way of life and enzymatic digestion are two techniques to isolate hUCMSCs from WJ and there are changes to enhance those strategies. Subculture situations may affect the growth and differentiating orientations of hUCMSCs. It may preserve their multi-capacity consequences after being properly frozen and thawed. The study concluded that multi-potential, convenient and non-invasive accessibility, low immunogenicity and the mentioned therapeutic effects in numerous one-of-a-kind preclinical animal models, hUCMSCs have colossal scope in regeneration medicinal drug as an alternative for UCB.

**Badowski MS (2012)** study on UCB. It may utilized in area of many condition which are life threatening in addition to in an expansion of regenerative medicine programs. The observe locating reviewed that the brand new traits in cord blood banking. 300,000 collections, which had been processed by way of any methods. So, the cells are being kept below freezing points through vial, luggage with a solution suitable for keeping foe a long period of life. The observer concluded that it’s miles feasible to certainly store, method, financial institution CB usage of presently to be had generation.
Zhurova M, et al (2012) study on red cell kept in the normal temperature. The main reason is that RBC present in the fetus cord has enriched Hb which is the fundamental need for the baby. The finding revealed that RBC found to be useful though it was in that temperature for a many days. The findings concluded that no giant decrease in cord RBC satisfactory was located throughout the primary sixty five hrs being in storeroom. The data give a hand in destiny improvement on how the result can be applied.

Deepa U (2012) conducted study on CB collection and its medical significance. The design was evaluative research. 50 staff nurses were selected by purposive technique and the knowledge and attitude scale were administered to the sample. The video assisted teaching programme bring a significant improvement in the knowledge of the subjects. The result concluded that generally ,even after going through the training program of their education, they are lacked in many area of nursing skill. Hence, the need of proper education completes when the curriculum is revised time to time thereby a well prepared professionals are brought out as they complete their basic courses.

Gong W (2012) found a high-quality compact of hobby found currently to appreciate MSCs, because of their vast therapeutic capability. The data were gathered safely. Based on their demographic variables ,the cells were verified and tested. The trial was performed to the samples. The result shown that it can be very well used for any groups. Bacterial and mycoplasma test had been terrible and endotoxin stages had been lower than 2 EU/ml. No damaging activities had been cited in patients dealt with any methods.

Machin LL (2012) study on the compilation of UCB for SC bank and the midwifery profession. The study goal to explore the lay and expert stakeholders roles. The qualitative face to face , semi based interviews which changed into recorded digitally. The data was gathered from 61 interviews within the period from one year and expert people inside UCBB. The locating confirmed that there were plenty of area and get admission to requirement for the privately hired to behavior the work. The study concluded that the midwives had been portrayed as accommodating privately hired to a degree.

Walker T (2012) conducted a study on CBB . The intention was to evaluate the level of attention and knowledge amongst working towards obstetricians concerning CB donation, makes remedy for treatment, encourage OBG to aid
endowment and compilation and present day usage with the aspiring couples. 2041 obstetricians working at metropolitan towns had been randomly surveyed in 2009. 139 of them from centre with CB collection and 156 obstetricians from without such privileged. Agencies responses were as compared through cross tabulation evaluation. The end result showed that both organization responses were similar with using CB in transplant remedy. 80% obstetricians feels confident to speak about approximately the CB collection, 49% expressed the inadequate in knowledge approximately CB to face the expectant mother and father. The study concluded that the obstetrician are familiar with the topic however identical time experience that there may be a need to have greater knowledge a good way to efficiently train and inspire the sufferers to donate their baby CB.

**Prasanthi B (2012)** study to depict the knowledge of parents regarding CBB. An Evaluative approach was used. The study was conducted in selected apartment. 60 parents who have first child are the subjects for the study. And sample are selected by purposive Sampling technique. The researcher collected data from the group by structured questionnaire information. The finding indicated a post test mean value more than the pre test scores. So the conclusion was STP helps the couples in improving the knowledge about CBB.

**McKenna D (2011)** the variety of UCB revealed a spread of efficacy in a considerable range of disorder circumstances. It’s been verified to be a appropriate deliver of HSCs for hematopoietic reconstitution. At the aspect of the advantages, UCB additionally has boundaries, and consequently numerous researchers are going for walks to in addition optimize UCB for this usage. Past hematopoietic transplantation, extra capability programs of UCB consist of all kinds of regime. Activeness of government and non governmental agencies brought a huge changes in this sector.

**Tada N (2011)** study on the current status of UCBC among obstetrician. The study’s intention was to show the contemporary reputation of UCB collection and also about the control of UCB financial institution. A questionnaire survey turned into carried out followed by means of semi structured interviews with a few respondents. The finding found out that the 28.9 % explicit the load in duty with the ordinary scientific offerings and they are willing to participate the strategies under certain occasions.
Santos SV, et al (2011) aim to find out the donor population & CB collection technique. The finding reported that there was a correlation involving the donor and the UCB unit value factors such as delivery methods, strategies in collecting cells, baby characteristics etc. It come to the conclusion that somehow the connection between the collection procedure and the outcome of the mother and child is there. Further included the necessity of ruling out the area where the relation exists.

Manegold G, et al (2011) aim to understand the clients view on public and private UCBB. The result reported that maximum were encouraged for donation, in that most of them felt better in public domain than private. There was a preconception over the policies, terms and condition where the private may inculcate time to time. So many expresses that public banking can be believable as they may not changed without certain rules and maintained quality.

Waller Wise R (2011) study on UCB among childbirth educators. Childbirth educators are the main resource for the parents to get records regarding UCB and its utilization so that the expectant own family could be capable of take decision on UCBB. The researcher changed into performed after the successful UCB transplant and extra families are looking for records about whether or not to save their newborns CB. The findings concluded that the childbirth educators need to be properly versed on the subject of CBB so as any doubt regarding the concerned may be cleared. Expectant households expressed that CB can be used most effective with the aid of the relatives when they're affected by recognized problems which can be treatable through the stem cellular transplantation.

Lovis TV (2011) carry out to analyze the knowledge of nurses regarding placental stem cell and its utilization. The approach was evaluative. Sampling procedure selected is convenient technique. 60 nurses working in Hospitals were given the structured knowledge questionnaire and data was collected. The result revealed that knowledge level of the group were improved after the SIM intervention. So it was concluded as nurses should be provided with some kind of training in order to upgrade the present changes in the health care sector.

Abdullah Y (2011) study on nurses and health care providers knowledge on CBB. The study purpose is to evaluate utilization of CB stem cellular in each non-public and public banking. Some support study findings already reveled and suggest for the baking of UC to opted for public sector over non-public till at hand can be a recognized part of the family with a disorder that could presently be handled with CB.
The findings discovered that personal CB banks shop wire blood to be used through the circle of relatives only, at a fee. UCB is then used for most of the people or studies which were taken from for such purposes either for application or further research. They have a look at discussed CBB options further to the ethical problems and boundaries coping with every healthcare companies and sufferers when handling CBB.

**Sandesh K.S (2011)** carried out to develop and conduct a video assisted STP on SC therapy. It was a single group type where forty nurses were trained for 8 days from a particular hospital. The discussion was completely done through audio visual aids. 10.80 mean value with SD as 3.864 test result before teaching them. But drastic changes after this class as mean was 20.58 with SD 4.290. So there was a good amount of changes in their outlook towards the concepts. Finally, the study brought out the significance of inculcating the SC topic on the education of the students. The curriculum for training needs an update as per the demand in the medical field.

**Shanees S (2010)**, through a pre experimental study conducted to see the usefulness of SIM as a way to enhance information on CBB. Using the purposive sampling technique, the sample of 50 nurses were selected. The investigator developed a questionnaire and structured knowledge was used to get the data. The report highlighted that maximum percentage had showed the better result after getting through the SIM. So the educational intervention program on CBB is needed to improve the standard of practice among health care practitioner.

**Dinc H & Sahin N.H (2009)** study aim to understand the lady's awareness and attitude about UCBSCs. It reported that 334 were taken from OPD and test was conducted. As generally, most of them had no idea about SCs and keen on knowing more about it. Nurses play a key role than the medical personnel in providing awareness on such topic.

**Harris D.T (2008)** reported the current scenario on UCBSCs. It also mentioned the expansion of this cells. the methodology followed while storing in the centralized was also brought out. Overall almost near to 100% effectiveness in the outcome of the procedure. Subjects was the women from both the types of delivery despite of the outcome and consequences. The whole concepts of CRB activities was discussed. The study shown the utilization in many ailments with different types of condition.
Studies on the practice about placental stem cell and its utilization

Lopes LA, et al (2016) study on good practices in collecting UC and placental blood. The goal of the study was to pick out the elements associated with the awesome of UC and placental blood specimens. Secondly to find out the excellent practices for their series in a central authority bank of UCPSC. The layout used was descriptive, quantitative technique. The putting became at a central authority UC and placental blood financial institution. It turned into executed in steps: first is confirmation of the all health related personnel, the use of a selected device for buying facts as not player viewers and second is lucidity of amazing performance through alliance group decided in advance than, at some stage in and after blood series. The result confirmed that there has been a connection with different category of people. The examine concluded that the extraordinary practices defined in this take a look at are an important manage tool to evaluate nurses work in acquiring blood specimens of high cellular excellent.

Mantri S (2015) the study was done to make possible the renovation of SCs by using some of the chemical for the longevity in the process of storing. The result showed that comparison of two reagents for the effectiveness of the cells while kept for the future application. The overall findings of the study suggested of 2 % DMSO can be adjust to 5 percent as opposed to whole elimination of the process.

Kim KM (2015) intended to bring out or turned into estimate the extent of cell capability and ability for CB devices. For a period of eight yrs long kept cell from 60 units public CB financial institution have been investigated. The result discovered that post thawing principles decided had been contented consistent with a hundred CD34+ cells changed into 67.5±48.7. The findings concluded that any devices was no longer accelerate in the course of storage.

Bassiouny MR (2015) study on optimal method for collection of UCB. The aim become intended to locate the impact of the technique. One hundred eligible mothers for donation of CB had been covered in the study. The method used as both from outside and inside uterus. The UCB quantity turned into calculated. The end result observed that there was a substantially massive different in the two methods. The collection from inside had better amount of CB and TNC counts than ex utero series. Ultimately no large disparity amongst each strategies on cell quantity. The have look at located a enormous correlation many of the quantity of the
accumulated cells and CD34+ cellular counts. The study concluded that in utero would be adopt to have an excellent outcome.

**Hatzistilli H (2014)** study on health professional's knowledge and attitude towards the UCB donation, Greece. The goal of the study was mainly on to understand the health specialists' expertise and attitudes toward umbilical cord blood. The study turned into performed from April 2012 to may 2012. 109 health professionals from three provincial hospitals and a pair of hospitals in Thessaloniki were selected. The questionnaire became designed with the aid of the researcher and a collection of specialists to serve the assignment of the existing examine. One hundred thirty questionnaires were sent, 109 had been completely answered, physician were 23.9%, midwives have been 34.9% and 34.8% have been nurses. The findings confirmed that health professionals knowledge on the UCB indicates only 15.6% concerning the gathering techniques and using UCB. The big number of the respondents (89%) stated that a properly-prepared software on a persistent schooling is extremely important. The members affirmed that inside since five years nothing or hardly schooling concerning the gathering, keeping and treatment of UCB was near to 93.5 %. The study concluded that the health professionals degree of information at the utilization and storing of UCB is insufficient. The study findings indicated the need of establishment or reinforcing of efficient packages of persistent education with the usage of technology.

**Celluzzi CM (2014)** the intention of the study was to become aware of the key factors that make up excellent schooling packages to optimize collection practices and exceptional of the goods accrued. The techniques used become MCQ and inquiries to discover education skill of these amassing HSCs and CB merchandise were disbursed via an electronic survey tool international. Facts have been accumulated on capability, work descriptions, and material of schooling applications which includes general practices, team of workers assessment, retraining, and precise application functions. 50% of the team of workers desires preliminary schooling as a lot of strategies became accomplished till competency was achieved. Body of workers retraining become used to the format.. The study concluded that statement, practice, assessment, and retraining till experience is performed. Accomplishment became totally at the capability of team of workers to carry out strategies for the long run measured in product excellent. Diagnosed
functions may additionally help centers in addition developing and strengthening their very own schooling packages.

Stella MA (2014), investigated in order to see the effect of exhibit on SC treatment on nursing students. 50 nursing students from the particular college has been taken to analyze the use of teaching aids in order to boost their familiarity. The study finding depicted the necessity of student curriculum for revising every now and then so that the recent changes in the health care and technology be applied in their syllabus. Hence, the practice of the nursing skill will be effective in every steps of care.

Akel S (2014) study aim to analyses the techniques of handling, thawing, and infusion of CB merchandise range extensively amongst thaw/transplant centers. The evaluate compares presently to be had CB product kinds and thaw strategies encouraged by means of CB banks, gives a procedural template for the conventional thaw strategies, indicates desirable way. The study concluded that there may be a need to succeed suppliers directions to help the consistency of better strategies suggested through banning for CB, look into relevant exceptional troubles and deal with challenges, mainly when the TC is not able to comply with tips as a result of predictable methodological, nice or medical influence.

Guttridge MG (2014) conducted a study on storage time affects UCB viability. The study was to assess that delay in the process of cryopreservation may adversely have an effect. The findings revealed cell capability and consistency. The study tested that prolonged pre cryopreservation negatively affects possibility and need to be discarded.

Jakha LM (2014) reported to analyze the knowledge of nurses on CBB. The design adopted was quantitative approach. 50 Staff nurses were taken by non-probability convenience way for the study and administered the questionnaire. The finding shows the mean value of after the PTP was more than the table value and as compared to pre test. It concludes as the teaching programme was effective to the group and should be made as part of the staff development programme.

Keersmaekers CL (2014) conducted to find out various ways concerning UCB or SC appropriateness for use taken from inside uterus. The study aim to look at examining UCB devices used in different places. The variables were accrued from CB statistics, patient charts, shipping statistics, and facts processed. The TNC
matter involving devices decided on for relocate and the one bank but no longer decided on for transplant have been also in comparison. The end result revealed that of the eleven variables evaluated, 6 had a big affect on the ideal banking TNC count. The most was CB volume because of good one. The study concluded that many of the perinatal and postnatal problems are to be mentioned in doing banking. Of course, the higher and better units and volume will be decided on to bank.

**Antoniewicz Papis J (2014)** study on methods of freezing CB hematopoietic stem cells. The goal is to determine most fulfilling techniques of CB cryopreservation. The approach used turned into -step cryopreservation and managed-charge freezing at the post thaw high-quality of CB with controlled-rate freezing approach. The identical cryo protectant solvent of different units being taken to various changes. The finding confirmed that initial white blood cell counts decreased in both strategies. It was concluded that the technique or the methods follow hardly predict the efficacy of any cells. So there needs to bring out many forms to do such things.

**Huang L (2013)** study aim was to discover the impact of various techniques of doing the procedures. The findings bring out the factors which are responsible for cells to show differently in all the area. It was concluded that neither the freezing nor other system influences the cells on the treatment outcome.

**Asmitha M (2013),** objective to analyze the VAT in the aspect of facts on UCBB. 100 pregnant women from the community area of urban was considered and included in the study. It was a survey way of assessing the level of awareness. The teaching was carried out after 8 days of test and re test was again performed to conclude the changes in the level of information. The findings depicted a changes in the value. This clearly indicates a usefulness of this aids for the classes to train effectively the public to bring an update in the recent advancement.

**Viswanatha RP (2013),** studied so as to understand the end product of STP upon the idea of a couples who are recently married. A quantitative approach was used and 50 subjects were in the study taken through randomly by convenience method. After the test was done the teaching on the SC banking was given to the subject. Keeping a gap of 7 days, the post test was again assessed. The result revealed an enhancement of the familiarity among the couples. So it came to the conclusion that the needs of a awareness is on the priority as they are the prospective category who should initiate for the SC storing. This is the only ways that
the SC collection can be made to the maximum once the public with the exception of the connotation of the expediency of this regime.

Thomas B (2013), stated that CBB as a helpfulness content to be taught among 3rd year b.sc nursing students. The subject were from the two colleges. The sample of the study included 60 participants include both genders. Through the interview and questionnaire related to CB and SC the acquaintance were assessed. The following was the teaching done on this topic after some days. A difference in significant were seen with the some of the variables. Hence the study finding brought out the significance of the preparation for the group to enhance the updates in such concepts, specially for younger generation.

Jakha Leenu M, (2013), know about the helpfulness of planned teaching programme on CBB. The sample size was 50 nurses. The data obtained from the studies was collected using hand delivered questionnaire. Baseline the items in the structured form included socio demographic variables and items to know the knowledge about CBB. The approach was to evaluate the outcome. With a gap of some days, PTP was provided to them thereafter the re assessment. The report showed improve with respect to CBB in among the subjects. There was less information to the staff and hence, had decrease skill. But the teaching had help them to some extent in improving the practice of the procedures.

Wagner AM (2013) a prospective survey on HSC and UCB cells. The layout was mounted via the moral readiness to the following steps like from the collection to treatment. Sample were all the health professional and clients relating to such exposure. The result revealed that there was universal. The finding concluded that there may be a moral trouble as breathtaking common on normal man or medical personnel.

Varghese SA (2013) study intended to make the health care providers be more thorough about the present scenario on stem cell therapy in the treatment or any other care. Main objective was to see that such kind of teaching programme may help to get more information and updates in the part of their learning. 60 students being taken who made the inclusion criteria. The design selected was pre experimental one. The data used for the collecting information was question item develop by researcher. The analyzed result indicated that the post test mean score was 25.52 which was more than the pre test score 12.33. The mean percentage in pre test was 51.1% and post was 90.1%. It interpreted that student had only some
knowledge about the concepts of stem cell therapy, but such teaching is helping
them to gain an extent of information thereby enhancing their knowledge. So it was
concluded that it is really needed for such programme for the nursing students.

Hanglem R (2012) the study intended to determine the STP effectiveness on
knowledge on CBB. A pre experimental design with evaluative approach was used. 50
nurses were taken by purposive sampling technique. The data indicated that 84.11%
was the post test mean score, SD 2.168, it was more from the pre test value of
55.03%, SD 3.161. The t value was higher than the table i.e 22.41. It shown that the
STP have an influence on the knowledge to improve. Finally it was concluded as
such teaching programme should be a part of curriculum in turn benefited in practice.

Muralidharan P (2012), reported that sixty staff after completing the basic
courses were plan to make out the efficacy of SIM to improve their information on
CBB. A questionnaire was used in the study. So the finding shown a difference in
significant signifying that self instructional module was efficient in mounting the
knowledge of staff nurses as the t=14.34. Also, the mean post test knowledge score
was found to be x2=43.17, upper than the mean pre as x1=30.40. Therefore, the
outcome brought out as there is a needs for some kind of education as in service to
be provided in order to comprehend the changes in the technology and health care.

Polchow B (2012) study on method used become a essential step of
traditional studies and expansion starting substances to GMP yielding preliminary
instances. It was concluded that variation of cell segregation, development and cryo
protection amenable preliminary supplies become a success.

Reny PV (2012), stated about the effect of SIM on information and attitude
on CBB. The corporation maternity centers was the place for conducting research.
Sixty subjects being taken through convenience sampling. The test was done before
giving the module and after the outcome of SIM, then the re test was carried out.
Based on the output of the score , the area of information were develop to teach them
how effective the content can be made. The report shown a changes in the score of
the variables before and after the analysis The study concluded that the medical
facilities should be accessible at all the sectors of the health care even at the
community level. The intervention made for the research was useful to some extents.

condition to treat. The data was collected by clinical Trials. The conclusion of the
findings was that there's required a proper protocol and norms to be followed for such procedure as ultimately the outcome is the matter.

Reddi P (2012), reported a study to know whether the STP improve the understanding about the CBB. The main purpose to conduct the study among final students of nursing was that they are the prospective group who will be the future practitioner going to be in clinical as they complete their courses. In experimental 40 students and different 40 in control group had been screened by random. The study conclusion was that requirement of educating the nursing pupils on the topic of CB and SC as this days more clients approaches for the new concepts where the health care demand increased in the society.

Zhang WH, et al (2012), study on lead levels in UCB. The goal of the observe became estimate the existing situation of CB stages, become aware of resources of such experience. It was carried out in five delivery centers. 50 UCB samples had been accumulated. It was concluded that new prevention strategies need to be planned for groups at chance succeeding lead publicity.

Deepa E (2012) objective of the research as to know about understanding regarding CB banking among staff nurses. True experimental with pretest and posttest control group design. An Evaluative approach was adopted. Using Purposive sampling 60 sample were selected. The pre test knowledge score found to be less than the mean post score. The conclusion was that such teaching programme really help them to gain information thereby update their skill.

Monika N(2012) objective to find out the knowledge of staff nurses regarding CBB. A non-experimental descriptive design was adopted. 60 staff nurses working in maternity unit and being exposed to such kind of treatment. The sampling technique used was non probability purposive. By the structured questionnaire, data was collected and analyzed. The result revealed that there was a positive co relation between the two variables. As the knowledge mean score was more the attitude mean scores was less. It concluded as that the nurses should create a positive attitude towards the CBB by doing that the public will be benefitted in getting the information.

Akshatha RK (2011) reported the intensity of comprehension on PSCs banking on midwifery nurses. The sample are taken only who are in the delivery ward. Design was pre investigational. Through convenient sample 60 subjects were selected. Using structured knowledge questionnaire, all the related data were able to
collect, then was analyzed through statistical packages. The outcome shows the improvement in the scores of the group after the STP. There it brought out stating a need of such teaching among the health care personnel to cope up with the changes in the health care technology.

Anoop VP (2011), investigated the future implication of teaching about CBB through the STP on regime on nurses. The design was descriptive in nature. Sixty staff were included an interview them on the topic of SC. The significant difference were found in the scores after the STP. The value obtained were greater than the table value. It was concluded that teaching in the recent trends in medical is at utmost required in every milestones of life.

Marquez GA, et al (2011) study on CBB, transplantation. A complete of 589 UCB units had been saved, representing 54% of the full quantity of units accumulated. Result brought out 48% have been introduce for the application. Out of that 26% come forward with many health ailment to receive the treatment. Study concluded that the experience supplied herein continues to be restricted due to the obligation in the duration of work under taken and process of report generate was little, the effects received for the duration of these 5 years are encouraging.

Boo M, et al (2011) study on CB. As using UCB, there can be certain issues while taking from others so the government need to create clear terms and conditions. In US, certain strict rules were followed where every unrelated SC used secure under particular law. Every medical personnel needs to understand this information. The study located that as more transplant programs undertake UCB for transplantation, it’s far crucial to live modern with such ethical dilemma. The study concluded that there is a complication while UCB units to be used.

Tsagias N, et al (2011) bring out Transplant from UCB and its purposes. The result indicated different ways of doing this procedures. Lots of new technique may be without difficulty implemented, together with UC blood, for UC banking.

Suen SS (2011) aim to assess the information on business UCBB amongst pregnant girls. The researcher selected a cross-sectional survey design into used. The placing became inside many ANC centers. 12000 mothers were selected and test was conducted. Study locating indicated that 78.2% shown no idea about the hazards of using own saved SCs and maximum had doubt whether any other diseases apart from blood cancer be treated or not. 20.3% thoughts that it can only be used for own purposes. So conclusion was that hospitals personnel and
government have to join together for monitoring a record on how this cells are being utilized.

**Kudo Y, et al (2011)** study on value measurement of UCB units at the timing of treatment regime. General nucleated cellular (TNC) remember, result of UCBT. Assessments of unit first-rate have typically been provided via CB banks (CBBs), far doubtful on the part of assessment. The study concluded that the health personnel should be properly select for doing this technique to have a better usage and make as a fruitful one.

**Sangeetha X (2010)**, depicted for finding out the usefulness of SIM on expectant couples on CBB. The evaluative study was adopted. 30 couples were interview on the CB. SIM was distributed to all the subjects which was prepared based on the knowledge level of the participants. After 10 days the same test was conducted to them. The result brought out the average value was increase after the interventional packages. So it came to conclusion that any form of aid to provide the information makes a change in the behavior of the clients.

**Scrcnci M (2010)** study on CBB for HSCs usage for therapy. The intention of the research work done to evaluate the feasibility of related CB amassing, the aptness of garage. The approximate of sixty family are included. All are eligible in the event that they have been being concerned. Proper devices had been amassed and stored for sixty four patients. 60% cells taken were not suitable for use.21% show the ability for possible treatment. The study concluded that UCBB for couples ought to be in addition investigated and price-powerful tips policies offer as vital aid, public offerings must be supported and better.

**Ziegelmueller J, (2010)** study on various way of cell derivatives and its process of storing. Those findings constituted a sizable breakthrough on expansion of latest scientific techniques for the many anomalies treatment. The study conclusion was that lots of new technology being available to have a maximum utilization to cure many health problems.

**Ricci G (2009)** study on the collection and conservation stem cells from UCB in Italy. This has a good amount of MSCs and HSCs. Lots of business oriented banks for such purposes are well established. So it help the public to show interest top store SCs. The study revealed that it has long prohibited management of UCB in personal shape. However as the law changes, in this country accomplished fundamental rights for the benefit of people. The results concluded that there may be
a need for assurance that either in both the sectors the public should increased in keeping the SCs.

**Zlopasa G (2009)** study on collection of cord blood cells. Recently, UCBT have been progressively more worn in each pediatric and adult patients. Careful collection of CB is of excessive importance in accumulating exceptional CB units. The item offers a overview of the methods of collection after vaginal beginning and cesarean phase. A number of the processes which can have an consequence on the extent of amassed CB are referred in addition to the effect of obstetric factors on the hematopoietic cellular compartment of CB is defined. The method of CB collection at college branch of obstetrics and gynecology, Zagreb college faculty of Medication is defined. The study had presented a few points for a success CB collection.

**Cepulic B G (2009)** study on Cord blood banking. A very new and brand hastily growing place in present scenario is the transplantation of CB stem cells. The application is that many ways to use as a remedy for plenty sicknesses which includes hematologic malignancies etc. This bring a lots of motivation on the part of the people to bank the UCB. Once the number is increased, it will be easy for anyone to find the matched to receive. The study discovered that lots of population are showing the interest on this concepts which might be soliciting for storage of CB for viable future therapeutic use within the own family. The study concluded that established order of bank make it essential clinical, criminal, fair and has made an important discussion in the study.

**Basford C (2009)** study on approach for evaluation on hetastarchas scientific, one of the accepted. The validation of records covered restoration of various cells and units. The conclusion was that prepacyte-CB do better advanced result than any other methods for segregating the cells.

**Beshlawy AE, et al (2009)** aim to evaluate the stem cell collection with no scientific and moral issues. The result revealed that the rely of cell viability as per the freezing duration impact the growth and the quantity. The study concluded that despite the fact that more time in keeping effect the cell number and practicality, cellular component have to be taken into consideration as important additives of growth media is unsure.

**Ruhil S, et al (2009)** study on UC stem cell: an overview. In recent years, an attractive among the populace is the regime through SCs. Though fact is that, the medical utilization on this aspects is not only to some of the condition but to
many types of problems. The most rich source is from the baby's stem cell. The study concluded that without any issues from the health side with limited ways, the future can be better by using different stem cell resources.

Gascard C (2008) aim of the observe become to evaluate the application of CB within the family of any type of sickness. 47 infants from whom CB became amassed for siblings from 1993 via 1999. Cord blood become gathered for 47 capacity recipients: 37 (80.4%) with malignant disorder and nine (19.6%) with nonmalignant sickness. The study showed the practical difficulties in accumulating CBT to siblings, difficulties which could decrease the probability of fulfillment.

Skoric D, et al (2007) study on collection strategies and cryopreservation of UCB. The aim was to evaluate firstly two distinct UCB collection techniques even as inside the womb. Secondly about the HSCs effectiveness in treatment part. A different form of doing procedures were adopted. The statistics provided revealed an awful lot higher recuperation of cells from cord blood while method of cryo minis temperature monitor in control applied and 5% DMSO had been blended. The study concluded that it is always better to comply with the techniques well.

Iffy L, et al (2007) indicated that SCs has made more advance in every aspect. It shown how best the cell can be collected by following cord clamping methods of quick clamping. As like in CS operation the output is not good compared with the VD. The study concluded that though controversy can do favorable in future, means of portrayal consideration on extraordinarily not noted component of perinatal medicinal drug, there want a greater research on stem cells.

Rumiantsev SA (2007) umbilical blood is a supply of hemopoietic SCs for therapy. The study aim to build up and introduce into practice scientifically validated methods of collection, testing and storage of hemopoietic stem cells of UB for non-relative transplantations. UB and UB concentrate of 1004 mature newborns were studied with morphological, immuno cytometric and cultural methods. The study showed that established reference values of the number of leukocytes and HSC are essential for examination whether UB is useable for production of the transplantation material. Obtained with the procedure of UB concentration based on sedimentation of erythrocytes due to hydroxyethyl starch, transplantation material has volume 20.0 ml, contains 39.0 +/- 0.48 x 10(6)/ml leucocytes and 1.37 +/- 0.029% CD34+cells and does not differ from umbilical blood by percentage of basic subpopulations of leucocytes and HSC. Assessment of efficacy of leuco concentration procedure in
different pregnancy courses, delivery and technological stages of UB collection gives grounds to consider the methods optimal for use in UB bank, while testing is thought adequate for examination of the material for transplantation fitness. The study concluded that introduction of the study results into practice optimizes the work of stem cell banks and allows production of effective transplantation material.

Fox NS (2007) conducted a study on UCB collection: do patients really understand. 325 women had given nameless information. The finding discovered that ladies have been lack in understanding about the UCB banking and the uses of it. While requested whether or not CB can be used without any complication to deal with many kind of disorders. The results concluded that obstetricians need to count on that pregnant girls are poorly knowledgeable approximately CB banking. The decision making method ought to be carried out in the midst of intention to make sure each expectant gets a chance for a properly knowledgeable selection about CBB.

Tintu P (2007), studied to discover out whether computer assisted education programme on SC remedy amongst nurse. Researcher did a evaluative approach. The study consists of 30 randomly selected sample. The training was carried out using CAT in advance way. The data were collected in detailed about the SC. The outcome depicted that during pre-test forty % had no idea about the concepts. After intervention the value showed as eighty % of them experience a changes in their knowledge level. Overall the study concludes that any form of teaching given to them bring out a difference in their performance, henceforth it should be made available as part of their service.

Brunstein CG, Wagner JE (2006) study on UCBT and banking. The study aim to evaluate how effective SCs to have dealt with many illnesses. The findings revealed that the there may be a need to speak about the cutting-edge techniques to get better experimental consequences and increase get entry to treatment out of CB & SCs to a superior variety of grown-up client. The result also mentioned the brand innovative methods to decorate blood related recuperation via the usage of cells or straight intra-BM injection.

Mancinelli F (2006) study on obstetric factors versus quality of CB units impact on UCB collection. The study intention was to assess the primary problem issue for huge use of UCB units for HSCs to be used for treatment. The outcome revealed as baby weight changed was the main element that inspired biologic
capabilities of UCB amassed including general extent. Concerning direction on transport, it was observed as SCs quality from the CS indicated a better for usage in all the aspects than VD. On contrast to sex of the child, it was observed that girl child had better white blood cell, general matter than the boy. The study concluded that quantity and TNC are stimulated through several obstetric elements, ultimately indicate a best way of doing the procedures.

Solves P (2006) study on the collection of UCB. The purpose be to assess the advantages and not favorable among both specific CB compilation techniques in LSCS. 253 caesarean deliveries CB turned into accrued before and after the caesarean segment and analyzed the data of CB taken from CS for three consecutive period. The study confirmed that there were no statistically considerable difference in two ways which was being compared to see the outcome.

Todorov P, et al (2006) conducted a study on cryopreservation of UCB. UCB as it has large supply of HSCs. They have been used efficiently within the remedy of many diseases. Worldwide until now, more than 2 hundred umbilical cord blood units were cryopreserved and extra than 5000 transplantations had been gone through. The study concluded that the basic techniques for preparation, cryopreservation and storing of the material before transplantation have been represented

Elizebeth L (2005) brought out to estimate the effectiveness of PTP on health care providers at selected hospitals in Bangalore. Purposive sampling technique was used. Quasi was the selected design for the study. The data was collected from 50 respondents before and at the end of the teaching programme. The pre test mean value was (20.1) and that of the post test was (40.5). The end conclusion was that such kind of intervention should be planned for nurses as it need because of the high technological health care.

Stojko R, Witek A (2005) study on UCB, a ideal basis of SCs. Normally ESCs and the ASCs are the forms which is existing. The primary type derives from early levels of embryo development and are toti- and pluri capability. The second sort of stem cells are non-differentiated cells of mature tissues and have the functionality of reworking into kind of cell and tissue that are present in. In the recent year, the UB has come to be the brand new supply of hematopoiesis precursors as a result growing significantly the scope of feasible recipients; UB is a reservoir of MSCs out of which can be lifestyle in vitro offspring cells of numerous tissues. The
result concluded that the medical application of UB stem cells have been confined to the hematological transplantology, but evidently quickly they can emerge as the material of desire inside the surgical transplantology, immunotherapy and gene therapy.

**Vanichsetakul P (2005)** study on proven employ of CB for SC for therapy. The main opportunity supply for hematopoietic SC treatment has been known from last 10 years that it is only from CB. Regrettably, it is difficult to get the matched cells. Since first related CBT modified into finished efficiently to a baby somewhere long back. By that the it became a successful one for the utilization in many ailments. Sooner or later, numerous nice CB banks have been set up international prerequisite of unique problems which includes complete protocol for doing the steps like histo compatibility checking out, infectious and genetic disease attempting out, transportation, and safety of privacy of donors and recipients. The observe concluded that there are a few risks because of the amount and cellular unit accumulated, consequently techniques for variety of SCs.

**Koblas T, et al (2005)** intention of the thing is to analyze all the similar support studies on HUCB, evaluate its ultimate application inside remedy of diabetes mellitus. In latest years, it became an eye opening for many couples. The scientific application is restrained in some particular condition but it is not correct. It was concluded that some current reviews with reference to pancreatic SCs application and their identity, this kind of cells and their uses are subsequently be enable for changing HUCB-derived stem SC into generating b-cells.

**Tamburini A (2005)** study on health professional understanding on placental/ UCB. The purpose is to investigate the pastime among 1998 and 2001, in search of to get better amount. Participant had been taken written knowledgeable consent. The population were healthy ladies with no issues in pregnancy. 31 % had store the SCs, 69 % mothers had no interest. Information gathered from 27 % CS and 73% VD. It was concluded as there need a crucial time during the antenatal period to have all the information of the couples and encourage for storing.

**Lee MW (2005)** study on isolation of MSCs from cryopreserved HUCB. The goal is to assess the UCB as a wealthy supply. It seemed that exact substances for remedy in addition to for tissue engineering because of their multi differentiation ability of cells. The study concluded that an appropriate technique can be followed so that the cell can maximum be utilized in a fruitful ways.
Kamala J (2005) aim to assess the rate of infection of umbilical cord of baby. 100 normal term child were selected by simple random method with two group control and experimental design using purposive technique. Rating scale and checklist were used for data collection. The data indicated a maximum had not showed the sign of infection of almost 70%. Both the group had a good practice of delivery and born the child. It was concluded that a better way to dry the UC is natural rather than any other method. However it also mentioned the need of continuous monitoring for any sign of bacterial growth.

Shini SA (2005) intended to find the effect of STP significance on staff. Interventional study was adopted. Quantitative approach by way of pre experimental as a design. Sample consisted sixty staff nurses chosen by convenience method. Researcher could conduct the test by question item prepared. Data was calculated and presented in the study. The result discovered significant difference signifying that SIM was efficient in mounting the acquaintance of nurses, \( t=14.34 \). The mean post test knowledge, \( \chi^2 = 43.17 \) elevated than the mean value (\( \chi^2 = 30.40 \)). The conclusion was that training the heath care providers with the change in current scenario is essential as always upgrade in any area of health is at the utmost.

Dohmen D (2004) study on legal and ethical issues while collecting CB stem cells. The study aim to find the authorized question regarding the usage of UCB. The take a look at analyzed the CB belongs to the child, and therefore they can claim by following appropriate technique to separate this cells, it gives a good result for using for any kind of regime. positive non-public rights concerning the CB. For the reason that new child itself is not in a position to take part in felony transactions, its parents should make sure that its personal and financial worries are covered, as they may be its criminal representatives. The parents can decide together what shall happen to the cord blood because of their parental custody. They have to give their consent to the donation of the CB in addition to that the information and the rights for undergoing the procedure from the baby. The duty to obtain permission for the production of stem cell preparations derives from the German drug law. The study concluded that maternity clinics and cord blood banks need permission and those blood banks that stock up on CBSC preparations for indefinite recipients have to obtain an additional authorization.
Wada RK (2004) conducted a collaborative study to collect UCB through many bank. The triumphing have a look at as compared CBUs collected around that areas. The findings found that CBUs has no distinctive from the two websites with regards in the number of cells and amount. The take a look at concluded that there may be a want to help intention value-powerful series as particular group of people and its variety differ.

Frenandez CV, et al (2003) intended to determine the lady's awareness on CBB. 650 participants from OPD filled the test which was carried out for 4 months. The study findings indicated that 50% of them lack in information medical team should be involved in providing the accurate updates on the topic. Banking in public sector was the choice as it was expressed the prospective in term of future utilization or further research on CBB.

U Pratya Y (2003) study on collection and processing of UCB for cryopreservation. The outcome shows different techniques and methods for collecting. The study concluded that the UCB devices were without difficulty gathered, unexpectedly in a 60 seconds duration, excessive recuperation of HSCs was acquired.

Shen HP, et al (2003) study on various methods of storing the CBSCs. The study was done in order to analyzed the scientific proof to bring that this cells are found more in CB. The study concluded as it became confirmed some specific technique need to be followed so as to have a greater result on the part of storing and utilization.

Dhot P S (2003) study on banking of CB and SC with the therapy. CB can deliver HSCs, it has numerous blessings as it is without a problem on hand, entails non-invasive series approach and is better bear for the duration. The findings indicated that the proliferative ability of this cells from CB is greater than what is taken from ABM. Triumphing have a examine modified into achieved for accumulating, parting, record and cryopreservation of CB HSC and setting up a CBB financial institution. 172 samples were gathered after delivery of little one previous to expulsion of placenta. The check concluded that the average CB quantity collected modified as required.

Aufderhaar U (2003) study to used CB as an option for both the type of treatment. Result reported that the advanced the babies' delivery heaviness the
better changed into the amount. The study concluded that intrapartum elements have an effect on the characteristics of accrued CB cells.

**Paczkowska E (2002)** study on storage of UC cells in mechanical freezers. The goal of the existing examine become to use the approach to UCB cells and to decide surest freezing situations as measured via progenitor cell survival. The finding found out that the very best survival price amongst UCB cells species subjected to mechanical freezing become established by mononuclear cells enriched for the CD34+ subpopulation. The presence of CD34- mononuclear cells and erythrocytes inside the cellular suspension decreased progenitor cell survival and proliferation ability. It changed into also observed that cells out of blood from cord be able to frozen in uncontrolled way. The outcomes were unaffected by using the kind of medium used. The study concluded that the uncontrolled rate freezing of UCB cells is an appropriate approach previous to transport of the cells in dry ice to a important banking station and garage in liquid nitrogen till wanted.

**Pafumi C (2002)** study on persuade of the ways of birth on UCB gathering. The intention of this look at became to evaluate the distinction between UCB samples accrued at some point of a vaginal shipping and caesarean phase from December 1999 to February 2001. 863 CB units had been gathered and sent to Sciacca's UCB bank. 429 have been amassed from newborns added vaginally, even as the last had been accrued from caesarean sections. The method of blood collection consisted of puncturing the UC vein with an 18-gauge needle and chickening out the blood into a sterile bag at once after clamping and new child help. The blood was amassed when the placenta become still in utero and the indication to the type of transport. The consequences showed that the CB quantity and the variety of CD34+ cells accumulated had been comparable for the 2 agencies. The study concluded that the higher median extent of blood accrued from infants brought through caesarean segment seems mainly due to the specific clamping time, rather than to the kind of delivery.

**Szolomicka Kurzawa P (2001)** found out that the imply content material of CD34+ hematopoietic SCs in any form turned into mounted. The quantity, viability and clonogenicity of CB mononuclear cells had been checked. The accrued blood become stored in answers of anticoagulants and tradition media at some stage. Finding discovered that the UCB will be stored both at ambient temperature or +4
tiers for as much as 24 hours in RPMI solution with heparin. The study concluded that there is no relation among the cells type and its value.

Yasutake M (2001) study on SCs. It was to develop a cellular devices that can monitor the quality of the cells. The finding indicated that how the changes happened while storing and ways in dealing with turned into very simple. The study concluded that the brand new clear out system become proven the best in term of totally easy managing technique with an amazing recovery of hematopoietic progenitor cells. For this reason, the SCF system will be beneficial for the extent reduction of PCB devices for CBB.

Yamada T (2000) the motive of the study turned into to locate elements that could assist quality and amount needed for regime. One hundred fifty five healthful time period neonates UCB were accrued who have been introduced through any type of birth. In locating found out that the quantity of CS received is more than the normal birth. Changed into substantially better in the cesarean phase institution due to the bigger quantity gathered. The study concluded that it play a different angle in deciding which form is better to collect CB.

Smith FO (2000) study on the current status and the issues while collecting UCB among perinatal caregivers. The study aim was to determine the media coverage of UCBT and clean the doubts of the expectant mother and father approximately the opportunity of amassing and saving their newborn UCB. The findings revealed that highlighted the modern popularity of the CB gathering, strategies, protection problem associated with cryopreservation of CB units. Similarly, the scientific fulfillment of CB transplants from associated and unrelated donors is distinct. The study concluded that it could introduced out the most important problems regarding to CBT because it exists inside the yr 2000 to offer perception into the interesting place of scientific research.

Reboredo N (2000) intended to observe a set up and regulate a system for discrete CBB in addition to the organic description of the subjects. The early bacterial infection become decreased to less than 5% due to widespread education in collection procedures. The study concluded that the there's a need to set a fashionable method to observe while doing the procedure of UCB collection.

Elchalal U (2000) brought out to various way of HUCB taken. Around 75 of women were in the study and 3 technique of collection are followed for all 3 categories. The end result showed that most of the 3 businesses of volume
gathered, overall quantity organism, WBC charges become superb and relation exist. The study concluded about the best way is using of sodium chloride with flushing technique.

Fasouliotis SJ, Schenker JG (2000) study on HUCB. UCB has demonstrated to be a likely possibility supply of HSCs for children and several person with most essential blood related troubles. Promotion for status quo of CB banks to be used in unrelated transplants global needs to comply with a few aids. This offers many advantages. Some of them are like absence of donor threat and attrition, instantaneous accessibility, and the ability to increase to be had donor swimming pools in focused racial and tribal minorities. Findings indicated that techniques to get higher the usefulness of blood banks are currently below studies. To lower the chance of microbial contamination, closed CB collection techniques have set up to be advanced to open. Green banking calls for quantity reduction of devices without great lack of cells. The conclusion is that there's a want for a scientific, moral, and common doubts in regards to UCBB that need an clear to the public.

Armitage S (1999) study on CBB in London: the first 1000 collections. The London CB financial institution became set up. The method became achieved at two hospitals by dedicated cord blood financial institution group of workers after delivery of the placenta and the units are gathered. The pattern have been the mothers. The pattern were interviewed concerning scientific, legal and useful. The conclusion was that certain standard need to be followed while doing the procedures.

Armitage S, et al (1999) UCB is an opportunity supply for bone marrow reconstitution which are present in HSCs. The aim was to discussed about the various devices used for collection. The study concluded that via following some approach maximum utilization and application can be achieved.

Regidor C (1999) study on the separation and storage methods while collecting UCB. The look at purpose in analysis between two technique in doing the procedures. The locating showed that the HES led to a considerably higher in one device. Study concluded that HES system and the 50-mlcryobags represent a value-efficient gadget for huge-scale UCB banking.

Morikawa H (1999) study on collection of UCB. The study found out that UCB is less complicated amassed taken from after birth rather than from uterus. The take a look at concluded that the best ways to collect is by taking a special care in
doing the procedure like proper sterile technique maintain while cutting the cord, SCs is compulsory to have.

**Kodera Y(1999)** study on the current status and future aspects of umbilical UCBB system in Japan. The purpose was to determine whether or not non-governmental UCB financial institution which have been created in kanagawa prefecture, nine neighborhood CB banks had been installed in Hokkaido, kanto, Tokai, kinki and kyusyu district have been successfully accompanied the gathering devices. The observe locating revealed that the reviews of organizing those neighborhood banks and of gathering the facts of CB cell transplantation with the aid of 2 grant examine businesses are executed as in line with the pointers. The study concluded that the ministry of health and welfare is now growing countrywide CB banking gadget as a concern.

**Takahashi TA, Xu Y(1999)** study on existing condition of CBB in the world. The purpose was to establish huge scale CB banks for allogeneic transplantation round the arena. The reports from New York blood middle which shares 9000 units and shipped seven hundred units to us and different nations shows that PCB transplantation is as powerful as bone marrow transplantation. There are many CB banks in the global now and the range of PCB units stocked within the international are growing rapidly. The methods for collection and processing of PCB, and take a look at device for screening for viral infections range substantially amongst banks. The study concluded that the pleasant of PCB units stocked global has turn out to be an essential problem and a few important banks are looking to introduce device for the first-class guarantee of PCB.

**Richter E (1998)** conducted a study to assess whether a solution which is five cent Me2SO is satisfactory to conserve SCs derived from CB. On the premise of historical findings, 10% dimethyl sulfoxide continues to be used to cryo preserve stem cells. The finding found out that a final attention of 5% dimethyl sulfoxidein cryo safeguarding of CB -derivative SC in autologous plasma. The study concluded that a ultimate attention of five percentage dimethyl sulfoxide in own plasma without in addition preservatives is ample for keeping of CB and SCs in a bank recurring.

**Ikuta K(1998)** study finding indicated that blood from cord being postulated to be an substitute and efficacious supply of HSCs for allogeneic reconstitution. Early effects of CBSCT display incidence and rigorousness as opposed to congregation disorder. The study concluded that more than 4 hundred instances of unrelated
CBSCT were accomplished within the international. Kanagawa UCB financial institution has been hooked up on 1995 and other some private cord blood banks had been set up in Japan. 11 instances of unrelated CBSCT had been stated in Japan. Big scaled public cord blood bank have to be set up in near future.

Sugarman J (1997) study was to assess the moral problems in collecting the umbilical cord blood and tell the prospective dad and mom, clinicians, and investigators about the problems related to public policy. By impartial evaluations, heritage substances have been dispatched to the operating group. Man or woman displays of topics at a 2-day meeting had been observed via way of massive institution discussions in which consensus emerged. The document of it became made with the aid of a committee which turned into communicated to all of the businesses involved. The take a look at concluded that UCB technology is promising although it has several untried factors, all through this trial section, at ease linkage have being taken care.

Dracker RA (1996) study on collection of CB stem cells. The look at intention the ways of getting cells from CB, supposed as assets of immature hematopoietic stem cells that in the long run might use in transplantation. The locating discovered that the method of collection be based on various strategies, the cells need to be accurately examined, processed, and organized for cryopreservation if no longer used at once, the usage of desirable production practices and perfect standards of operation. The study concluded that there's a want to set up an ideal collection technique which meets criteria needed for consistency as well as simplicity for usage.

Summary

This chapter presented a ROL that is the basic support for the study which is being conducted. The writing support studies beyond has provide enhanced indulgent of the problem under study and in addition expand the researcher point of view, and that is the most essential part of research. It also helped the researcher to create the necessitate of the study, designing the outline of the plan for the study, research blueprint and advance of the tools, collecting the facts, planning the analysis and for the good discussion.