

**Knowledge, Attitudes and Practices on Unintended  
Pregnancy and Unsafe Abortion among Female  
Factory Workers in a Selected Export Processing  
Zone of Sri Lanka**

**A COMMUNITY BASED, CROSS SECTIONAL STUDY**



**The Monitoring and Evaluation Unit  
The Family Planning Association of Sri Lanka  
2022**



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Established in 1953, The Family Planning Association of Sri Lanka is a leading service provider and advocate of Sexual and Reproductive Health and Rights in Sri Lanka. The Association seeks to promote multiple aspects of reproductive health and improve the quality of life and well-being.

FPA Sri Lanka is an accredited member of The International Planned Parenthood Federation (IPPF).

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# **Knowledge, Attitudes and Practices on Unintended Pregnancy and Unsafe Abortion among Female Factory Workers in a Selected Export Processing Zone of Sri Lanka**

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The key informants who provide truthful information and inputs to develop significant findings are the most important contributors to any field study. We value the contribution of all our informants, the female factory workers, for their time and effort to participate voluntarily in an interview on such a sensitive topic and for trusting our team to disclose extremely personal information and to provide honest responses to enable successful research.

## Message from the Executive Director

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The topics of unintended pregnancy and abortion have generated a substantial amount of interest in the academia that a comprehensive body of research exists in the public domain for those interested. Yet this topic is of much interest to those working in the field of Sexual and Reproductive Health Rights and it requires constant updating to assess the changing attitudes and dynamics in order to initiate the much-needed reforms to the highly restrictive abortion law of the country.

Sri Lanka has a highly restrictive law stemming from the penal code that does not relate to the present times and needs. We all know that this environment will negatively and disproportionately affect the most marginalized and underprivileged women. It is our mandate to ensure that all people are able to enjoy their sexual and reproductive rights and have access to services that can be life-changing or even life-saving.

The female employees in the apparel sector of Sri Lanka are a target group of beneficiaries of SRH services provided by FPA Sri Lanka. We provide free services, information and counselling to the employees of three industrial zones through our Service Delivery Points, located within these sites. The attitudes and perceptions of these beneficiaries on this important area of Sexual Rights will add value and perspective to planning our future programmes for young people.

Our partnership with the Board of Investment (BOI) enables us to reach out to these vulnerable women who are mostly away from their base, working in a factory environment. FPA Sri Lanka has been providing free service and counselling both in a mobile and static mode, increasing the coverage in the allocated zone. Our experiences well over a decade show that unintended pregnancies among this group are high and cause much anguish to the women concerned.

I sincerely hope that the findings of the study will help us to better design SRH programmes that are more effective and relevant. My appreciation to FPA's M & E team, BOI and the factory employees who participated in the study is immense. I am sure this study will add to the existing research findings on the topic and widen the knowledge of everyone involved in the delivery of Sexual and Reproductive Health and Rights.

Lastly, I congratulate our Monitoring and Evaluation team on this accomplishment!

Thushara Agus  
Executive Director  
The Family Planning Association of Sri Lanka

## Abbreviations

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Bol	Board of Investment
CI	Confidence Interval
CDC	Centre for Disease Control
DCS	Department of Census and Statistics
DHS	Demographic and Health Survey
ECP	Emergency Contraceptive Pill
EPZ	Export Processing Zone
ERC	Ethical Review Committee
FFW	Female Factory Workers
FHB	Family Health Bureau
FPA	Family Planning Association
FPC	Finite Population Correction
GCE A/L	General Certificate of Education Advanced Level
GCE O/L	General Certificate of Education Ordinary Level
HEB	Health Education Bureau
IPID	Institute of Participatory Interaction in Development
IPPF	International Planned Parenthood Federation
IPPF SARO	IPPF South Asian Regional Office
KgEPZ	Koggala Export Processing Zone
LMUP	London Measure of Unplanned Pregnancy
MOH	Medical Officer of Health
MoH	Ministry of Health
NGO	Non-Governmental Organization
PHM	Public Health Midwives
PHNS	Public Health Nursing Sisters
PPS	Probability Proportional to Size
HR	Human Resources
SLMA	Sri Lanka Medical Association
SPSS	Statistical Package for Social Sciences
SRH	Sexual and Reproductive Health
UN	United Nations
UNFPA	United Nations Population Fund
WHO	World Health Organization

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## Executive Summary

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**Introduction and Background:** Unintended pregnancies and unsafe abortions are important causes of sexual and reproductive ill-health in many countries, including Sri Lanka. The reported prevalence of unplanned pregnancies in Sri Lanka varies from 23 to 46%. A significant portion of unintended pregnancies ends up as unsafe abortions. Abortion is a criminal offence in Sri Lanka except when performed to save the life of the mother. Even with a high national contraceptive prevalence rate of 65%, with 54% using modern methods (DCS, 2017), some women are faced with unintended pregnancies and some resort to abortion outside the law. A study conducted in 2000 estimated a rate of 658 induced abortions per day, amounting to 240,170 per year, giving an abortion ratio of 741 per 1000 live births (Rajapakshe, 2000). The Export Processing Zone (EPZ) workers are identified as one of the most vulnerable communities for induced abortions (Rajapakshe & De Silva, 2000). However, there is no proper study which assesses the knowledge, attitudes and practices of FFW on unintended pregnancies and unsafe abortion. This study aims to analyze the knowledge, attitudes and practices of FFW at the Koggala EPZ (KgEPZ) towards unintended pregnancy and unsafe abortion.

**Methods:** The theoretical population for this study is the 9,412 female employees working in 19 factories attached to the KgEPZ. Out of the 19 factories, 07 factories were selected using the systematic Probability Proportionate to Size (PPS) cluster selection

method. An interviewer administered structured questionnaire schedule was operationalized among a randomly selected sample of 608 FFW of reproductive age (18-49 years) after receiving written informed consent. Respondents' knowledge, attitudes and practices on unintended pregnancies and unsafe abortions were analyzed. Ethical approval to conduct the research was obtained from the Ethical Review Committee of the Sri Lanka Medical Association.

**Results:** Knowledge of the FFW on overcoming unintended pregnancies is average to low, which makes them vulnerable to health and social risks. Knowledge of youth respondents (age below 25 years) was significantly lower than the adults. Therefore, youth FFW are more vulnerable than adults, if they become sexually active. Respondents' knowledge of abortion and abortion law is considerably poor. Only one-tenth (11%, n=64) of the respondents were aware of the circumstances in which abortions are legal in the country. Around two-thirds (65%, n=379) of the respondents wrongly believe that the provision of treatment for a woman who has gone through an illegal abortion is an offence as per the present abortion law which puts their lives at risk if they face complications after an unsafe abortion. The situation concerning youth (girls below 25 years of age) is worse compared to the adult respondents. The proportion of youth respondents who provided correct answers is much lower than the adult respondents for all the knowledge questions. For example, only 25 (7%) girls

knew the circumstances in which an induced abortion is considered legal in Sri Lanka.

Results reveal that the attitudes of the FFW toward abortion are conservative. A significant portion of respondents (17%, n=102) do not want to legalize abortion even to save the mother's life which is already permitted under the current law. However, a majority (75%, n=440) agreed to legalize abortion to terminate a pregnancy with fetal abnormalities, if the abnormality is lethal. Approximately half of the respondents agreed to legalize abortion to terminate pregnancy resulting from rape (50%, n=290) or incest (46%, n=267). Less than one-fifth of the respondents wanted to legalize induced abortion for other conditions such as contraceptive failure (14%) and economic hardships (9%). Only 5% (n=31) agreed to legalize abortion at the request of the woman.

Nearly half of the respondents (42.4%, n=247) had used modern contraceptives during their lifetime (95% CI = 38.2% to 46.5%), whereas around one-tenth of the FFW (11.3%, n=66) had used emergency contraceptives during their lifetime. Out of the 379 married women, only 15.6% (95% Confidence Interval = 12.1% to 19.6%) had used emergency contraceptives.

Results indicate that unintended pregnancy is not uncommon among the FFW in the KgEPZ. Around one-tenth of the respondents (11.1%, n=65, 95% Confidence Interval = 8.7% to 14%) have faced a situation of unintended pregnancy during their lifetime; of them, more than a half (57%, n=37) are due to contraceptive failures. Out of the 297 respondents who have become pregnant in their lifetime, one-fifth (22%, n=65,

Confidence Interval = 17.4% to 27.1%) have faced an unintended pregnancy during their lifetime. In the ever-pregnant sub-sample, unintended pregnancy is considered to be more than two times higher among the youth (47%, n=9) compared to adults (20%, n=56). There was almost a two times higher risk of facing an unintended pregnancy among factory workers with three or more pregnancies than those with one or two pregnancies. Unintended pregnancies among the lower designated staff (workers/associates) were significantly higher (12%, n=59) compared to the higher grade staff (6%, n=6). Out of the 65 respondents with a history of unintended pregnancy, only 17 (26.2%) have ever used emergency contraceptives and 22 (34%) had resorted to induced abortion.

Almost one-fifth of the respondents (19.5%, n=114) were aware of a woman working in the KgEPZ who has had an illegal abortion in her lifetime. Some respondents (3.2%, n=19) were aware of a person or a health service provider in the locality of the KgEPZ who would be ready to provide induced abortion services. The prevalence of induced abortion among the FFW of reproductive age in KgEPZ is estimated to be 3.8% (95% CI=2.4% to 5.6%). There was only one unmarried respondent with a history of induced abortion. Abortion prevalence among ever-pregnant respondents were estimated to be 7.4% (95% CI = 4.7%-11%). 22 respondents had experienced induced abortions during their lifetime, of them; 18 (81%) had used surgical procedures whereas, 4 (19%) had undergone an induced abortion using medical procedures/pills. Induced abortions were reported among machine operators (n=12,

quality checkers (n=4), helpers (n=3), and higher grade staff (n=3).

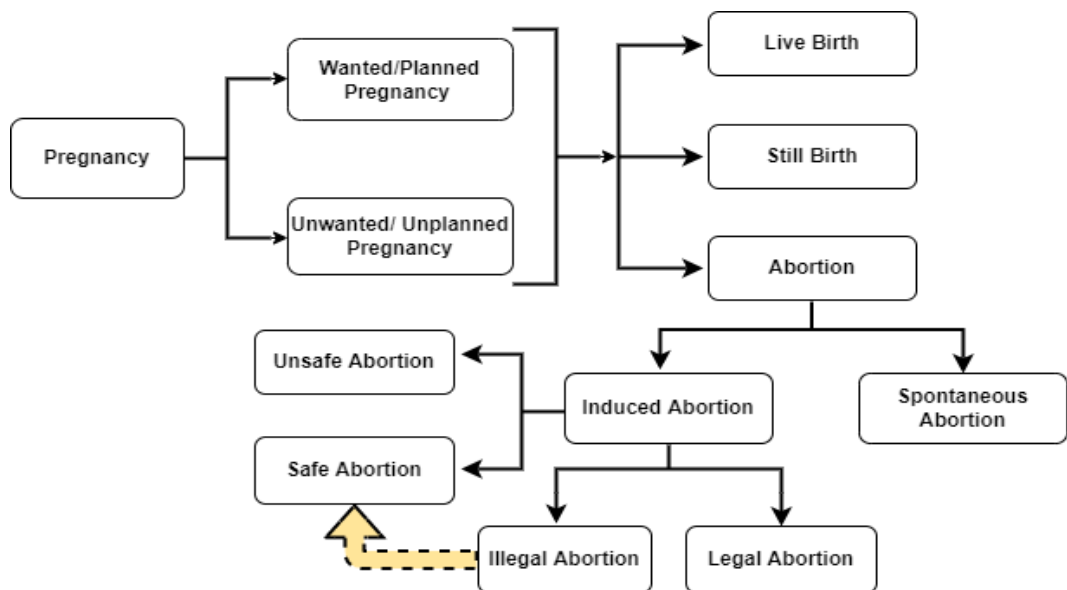
It is important to note that out of the 22 women with a history of induced abortion, 05 hadn't ever used any modern contraceptive method, whereas 20 hadn't ever used ECP. Ten (10) of them believed (wrongly) that a valid prescription is required to purchase emergency contraceptives from pharmacies, whereas eight (8) of them were unaware of the effective time period to take emergency contraceptives. They hadn't received the correct information even after undergoing an induced abortion, making them vulnerable to repeat abortions. All these indicate missed opportunities to prevent induced abortion among factory workers.

**Conclusion:** The Study concludes that the knowledge of the FFW on overcoming unintended pregnancies and unsafe abortion is considerably low making them vulnerable to health and social risks of unintended pregnancies and unsafe abortion. The prevalence of unintended pregnancies and unsafe abortions among the ever-pregnant cohort of FFW are 22% and 7.4% respectively, which is not negligible. Focus interventions are essential to address the issue from which both the factory workers and management can benefit in the long run. Conducting awareness sessions, peer education programmes and service delivery interventions are recommended. Considering the staff's work-life balance and minimum effect on daily operations, factory management may consider conducting digital health interventions using social media, mobile technology, etc.

## INTRODUCTION AND BACKGROUND

An unintended pregnancy is a pregnancy that is either unwanted, such as the pregnancy that occurred when no children or no more children were desired. Or the pregnancy is mistimed, such as the pregnancy occurred earlier than desired (CDC, 2021). A planned or intended pregnancy occurs at the desired time or later. Unplanned pregnancy is a significant public health issue in both low and high-income countries. The burden of unintended pregnancy is reflected in women opting for pregnancy terminations which can be detrimental to the woman and her family, the health system and society (Ranatunga & Jayaratne, 2020). An unintended pregnancy is

a risk factor for poor maternal mental health, including perinatal depression, stress, and lower levels of psychological well-being and life satisfaction. An unintended pregnancy increases the risk of maternal depression and parenting stress. Compared to pregnant women with pregnancy intention, pregnant women without pregnancy intention had greater exposure to cigarette smoking, drinking alcohol, taking medications and illicit drugs, X-rays during pregnancy, and were less likely to take folic acid and seek antenatal care (Bahk, et al., 2015).



**Figure 1:-** Pregnancy and pregnancy outcomes. Key terms (Suranga & De Silva,

Abortion is the termination of a pregnancy, whether spontaneous or induced (Kottke &

Zieman, 2008). Induced abortion is caused intentionally by the administration of drugs or

by mechanical means (The American Heritage Medical Dictionary, 2002). Illegal abortion is an induced abortion performed contrary to the laws regulating abortion in that country (Mosby's Medical Dictionary, 2009). According to the World Health Organization (WHO), an unsafe abortion is the termination of an unintended pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (WHO, 2007).

Unsafe abortions are one of the key causes of sexual and reproductive ill-health in many

countries (WHO, 2008). Assuming that all legal abortions performed in a safe environment by a skilled person are safe abortions, all illegal abortions presumably not done under similar conditions need to be considered unsafe (WHO, 2008). However, even in countries where abortion is broadly legal, many women still undergo unsafe abortions due to lack of access, shortage of doctors, poor healthcare facilities, and inadequate training of medical professionals (Population Reference Bureau, 2011).

### 1.1. Unintended Pregnancy and Induced Abortion in the Sri Lankan Context

According to the 2016 Demographic and Health Survey (DHS), it has been revealed that the awareness of family planning in Sri Lanka was 98%, the contraceptive prevalence was 70%, prevalence of modern methods was 53% and unmet need 7% (DCS, 2017). The reported prevalence of unplanned pregnancies in Sri Lanka varies from 23 to 46%. A community-based cross-sectional study conducted in 2010 in the Bentota MOH area revealed 46.7% of unplanned pregnancies (Malavige, 2010). A study conducted in the Colombo Municipal Council in 2015 revealed 44% unplanned pregnancies (Nawaratne, 2015) and a study in the General Hospital Matara in 2013 revealed 23.3% unplanned pregnancies (Edirisinghe, 2013). As per the results of the most recent (2020) hospital-based study conducted among 494 pregnant women using the London Measure of Unplanned Pregnancy (LMUP) tool, the estimated percentage of unintended pregnancies among Sri Lankan women is 17.2% (Ranatunga & Jayaratne, 2020).

Abortion is a criminal offence in Sri Lanka except when performed to save the life of the mother. Any person conducting an illegal abortion is liable to be punished with imprisonment of either description for a term which may extend up to 3 years or with a fine or both. In the case of the death of a woman, the person performing the illegal abortion shall be punished with imprisonment for up to 20 years (Penal Code, 1883). Even with a high national contraceptive prevalence rate of 65% with 54% using modern methods (DCS, 2017), some women are faced with unintended pregnancies and some of them resort to abortion outside the law (Senanayake, et al., 2008). A study undertaken in the 1990s estimated that 125,000 to 175,000 abortions, mostly illegal, are performed in one year (De Silva, 1997). A subsequent study conducted in 2000 estimated a much higher rate of 658 induced abortions per day amounting to 240,170 per year, giving an abortion ratio of 741 per 1000 live births (Rajapakshe, 2000). A later study applying Bongarts' model showed



an increase in the induced abortion rate from 0.035 per woman in 1993 to 0.087 per woman in 2007 (Abeykoon, 2012).

A considerable shift in the abortion practice can be seen in Sri Lanka after the emergence of medical abortion pills worldwide. Women who intend to terminate their pregnancies have easy access to abortion pills (Ex:-

## 1.2. Export Processing Zones

An Export Processing Zone (EPZ) is an area set up to enhance commercial and industrial exports by encouraging economic growth through investment from foreign entities. Incentives such as tax exemptions and a barrier-free environment are the main attractions of an EPZ. The main goals and benefits of an EPZ are growth from foreign exchange earnings through nontraditional exports, creating jobs to assist in income generation and developing labour skillsets, attracting direct foreign investment, and fostering technology transfer. There are significant benefits associated with establishing an EPZ, with countries such as China, Indonesia, and South Korea boasting great benefits. However, countries like the Philippines have faced poor performance from EPZs due to contextual disadvantages including adverse socioeconomic and health effects on employees working in EPZs (Thomas Publishing Company, 2020).

Established in 1978, under the name Greater Colombo Economic Commission, the Board of Investment (BoI) of Sri Lanka is one of the

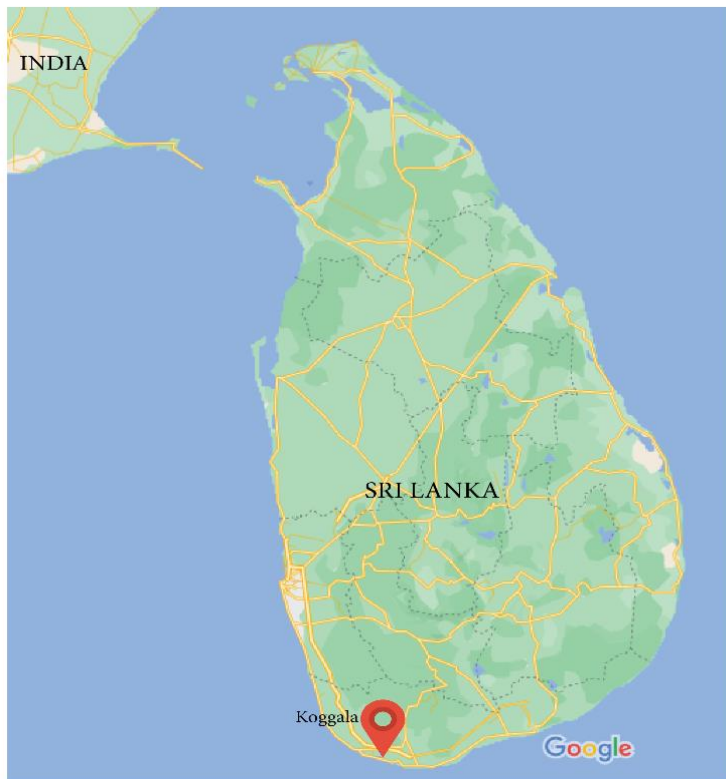
Misoprostol) and can administer the drug in the home environment. It is practised not to save the mother's life but for a broader spectrum of reasons (De Silva, 2019; Suranga & De Silva, 2020). However, there are limited scientific evidence and findings on the practice of medical abortion in Sri Lanka (Kaluarachchi, et al., 2018).

foremost investment promotion agencies in South Asia. As the apex agency for foreign direct investment in Sri Lanka, there are over 1700 enterprises under the purview of the BoI in its 40 years of operation. The BoI assumes responsibilities for identifying, approving, acquiring and developing sites, approving factories and monitoring and managing sites. It develops infrastructure within the industrial estates as well as power, water, telecommunication facilities and sewerage lines, and also provides services that may include maintenance of the public areas and infrastructure to provide overall security and welfare. The BoI has established eleven EPZs in strategic locations in the country namely; Katunayake, Biyagama, Koggala, Kandy, Mirigama, Malwaththa, Seethawaka, Mirijjavila, Wathupitiwala, Horana and Polgahawela (Board of Investment, 2020). The Koggala Export Processing Zone (KgEPZ) is one of the key areas, which is situated outside Colombo (in Galle district) in which more than 20 factories operate.

### 1.3. Study Area

Located in the South, the Koggala Export Processing Zone (KgEPZ) was established to fulfil the requirement of establishing factories outside the capital Colombo. The Zone is situated 16 km south of the Port of Galle and is envisaged as the nucleus for the

development of the Southern Province of Sri Lanka. The location of the KgEPZ covers about 8 km<sup>2</sup> bound to the Koggala Lake in the north, Pol Oya in the west and a strip of coastal land in the south (Board of Investment , 2020).



**Figure 2:-** Koggala Export Processing Zone, Sri Lanka

The Zone became operational in 1991 and its total extent is 227 acres, of which 195 acres are dedicated to industrial use. KgEPZ has emerged as a major economic centre in the South and an important contributor to the economy by accounting for export earnings of over US\$ 122 million (Opportunity Sri Lanka,

2018; Daily News, 2018). Currently, 19 enterprises are located in the Zone, manufacturing garments, plastic figures, footwear, aircraft repair and boatbuilding. The working population in the Zone currently stands at 12,670, of which 74% are women (Koggala EPZ , 2021).

## 1.4. Significance of the Study

The common reasons for pregnancy termination in Sri Lanka are; already having a very young baby when getting pregnant, already having completed the intended family size, the public perception that the woman is too old to bear children, getting pregnant while having grown up children and contraceptive failure (Senanayake, et al., 2008). In the past, when an unmarried young woman was found to be pregnant, she was usually married off as soon as possible to the man responsible to avoid a social calamity. In contemporary Sri Lanka, since many young females; mostly school leavers, are employed in EPZs or in manufacturing factories located throughout the country, they are increasingly finding it difficult to get married and those who have married find it is quite costly to have more than two children or even to have more than one child (Suranga & De Silva, 2020; De Silva, 2019). A study conducted in 2016 has identified a high level of heterosexual and homosexual unprotected sex among the workers in EPZs. Workers who were single had more unsafe sex compared to those living with regular partners (Rajapakshe & Weerasinghe, 2016).

On the other hand, a majority of EPZs do not provide their female staff with adequate income or support; employees are forced to live in squalor, work long hours – without

access to daycare or aid during pregnancy – with many potentially dealing with sexual and (or) physical abuse (Engman, et al., 2007; Peter , et al., 2015). Furthermore, sexual harassment has also become a significant issue for female EPZ workers. Many women have been forced to live away from their families – in low-budget accommodation, with minimal access to hygienic living conditions, nutrition and lack of transport – where feelings of vulnerability are compounded further (Peter , et al., 2012). A recent study shows that the healthcare seeking behavior of employees in KgEPZ is low due to various factors. Workers' perception of Western medical treatment and pain, difficulty accessing healthcare outside the factory, pressure from management to reach production goals, and financial and personal factors from taking time off work are to name a few (Rajapakse, et al., 2018). Therefore, the EPZ workers, including garment workers, are identified as one of the most vulnerable communities to induced abortions (Rajapakshe & De Silva, 2000). However, there is no proper study which assesses the knowledge, attitudes and practices of FFW on unintended pregnancies and unsafe abortion. Focus studies are needed to describe the knowledge, attitudes and behaviours of the women working in EPZ and their vulnerability to unintended pregnancy and unsafe abortion.

## 1.5. Objectives

This study aims to analyze the knowledge, attitudes and practices of FFW in the KgEPZ towards unintended pregnancy and unsafe abortion. The specific objectives are as follows

01) To assess the knowledge and awareness level of FFW in the KgEPZ on unintended pregnancy and unsafe abortion.

02) To understand the attitudes of FFW in the KgEPZ towards the Sri Lankan law on abortion.

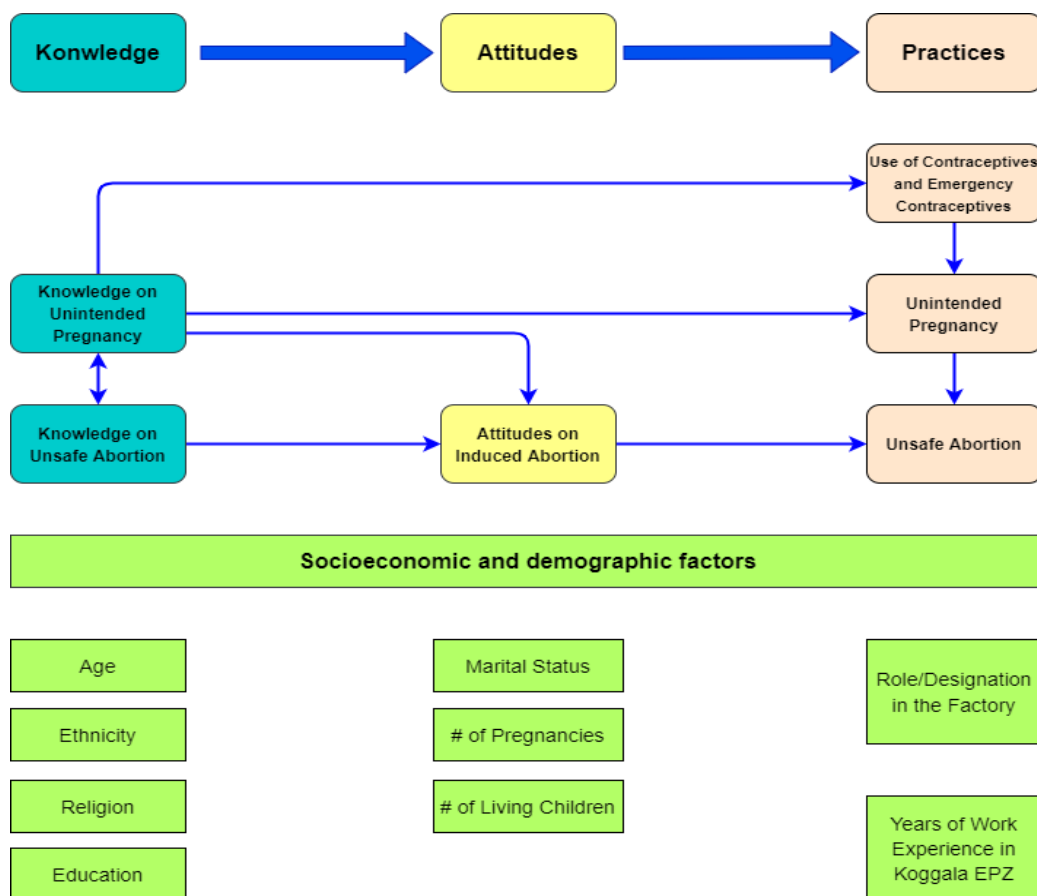
03) To unearth the practices of FFW in the KgEPZ on unintended pregnancies and unsafe abortion.

04) To explore the factors associated with knowledge, attitudes, and practices regarding FFW in the KgEPZ on unintended pregnancy and unsafe abortion.

# METHODOLOGY

The concept for the study was based on secondary data available on knowledge, attitudes and practices on contraception, unintended pregnancy and unsafe abortion. Since there was no reliable study on the same subject conducted in EPZs, we included the number of years working in the KgEPZ and the

role/designation of the respondent in the current factory by assuming those factors as risk factors for unintended pregnancy and unsafe abortion. Figure 03 represents the theoretical framework developed for the study.



**Figure 03:-** Conceptual framework of the study

The theoretical population for this study is 9,412 female employees working in 19 factories attached to the KgEPZ. An

interviewer administered structured questionnaire was developed to gather information to achieve the aforementioned

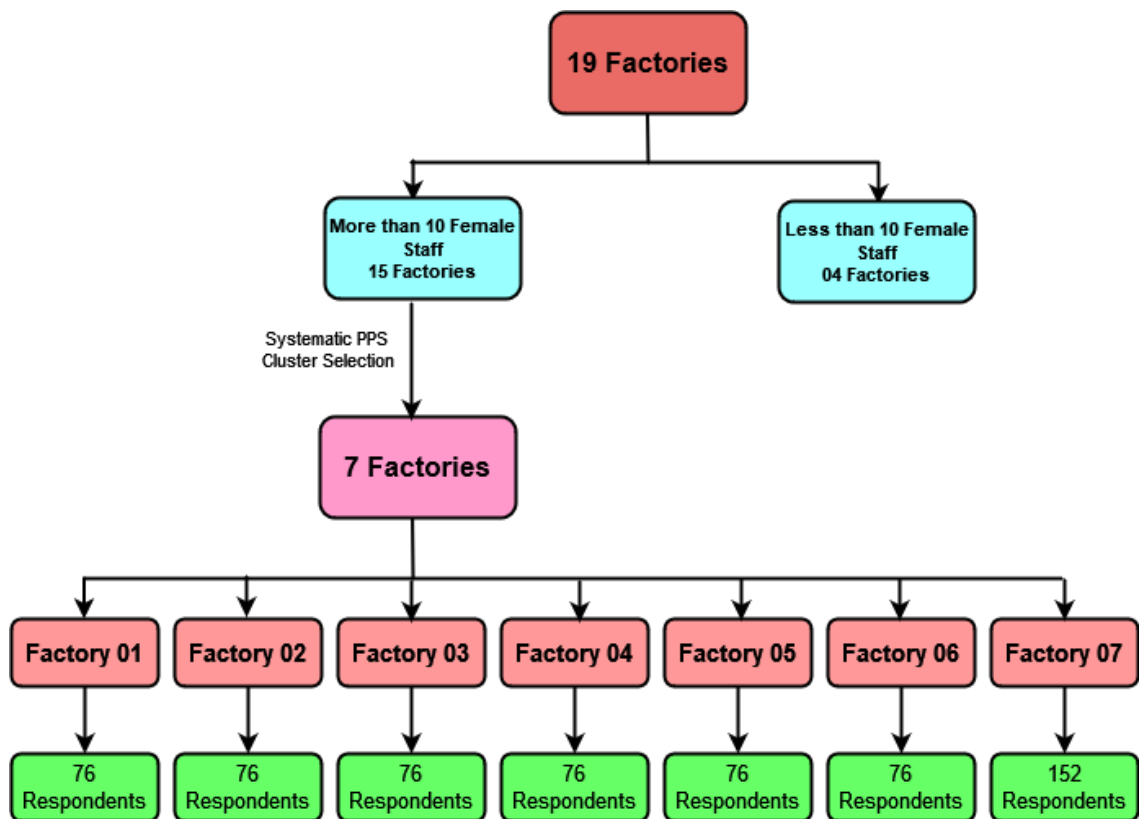
research objectives from a randomly selected sample of women of reproductive age. The interview schedule was administered by a well-trained group of female interviewers using an online mobile application after receiving informed consent from the participant. Different types of variables were

developed where it was not possible to have one variable. Descriptive statistics, correlation analysis and group comparisons using nonparametric statistical methods were used to analyze the data collected through the questionnaire survey.

## 2.1. Sampling Procedure

The multi-stage cluster sampling technique was used to increase the external validity (Figure 4). Each company located in the KgEPZ is considered a separate cluster. The four factories where the number and/or the

selected using systematic Probability Proportional to Size (PPS) cluster selection method (United Nations Secretariat, 2005). The names of the factories selected for the study were not disclosed in this report and



**Figure 4:-** Selection of 608 respondents by applying the multi-stage cluster sampling technique

percentage of female employees are less than 10% were excluded from the study (Table 1). Seven out of the remaining 15 factories were

other external communications as per the request from the BoI and the management of some factories.

**Table 1:-** Number and percentage of female employees working in the KgEPZ disaggregated by the company

	<b>Name of the factory</b>	<b>Total number of staff (Full time / part time)</b>	<b>No of Female Staff</b>	<b>% of female staff</b>
1	Ace Apparels (Pvt)Ltd	1109	902	81%
2	ATG Hand Care	683	461	67%
3	Aura Apparel Export	281	203	72%
4	BAFF Polymech**	138	7	5%
5	Brandix Essentials	1572	1264	80%
6	Esquel Sri Lanka Ltd	1738	1288	74%
7	Flintec Transducers (Pvt)Ltd.	317	137	43%
8	GLY Asia**	16	0	0%
9	GLY Asia**	16	0	0%
10	Kansai Paint**	30	3	10%
11	Koggala Garments (Pvt)Ltd	542	360	66%
12	Lalan Rubber (Pvt) Ltd	137	35	26%
13	Lanka Garment (Pvt) Ltd	487	366	75%
14	Mas Unichela	3256	2686	82%
15	Mona Plastics	472	322	68%
16	Star Garment – 2	457	331	72%
17	Star Garments -1	730	558	76%
18	Trend Setters	252	169	67%
19	Vouge Tex (Pvt) Ltd	437	320	73%
	<b>Total</b>	<b>12670</b>	<b>9412</b>	<b>74%</b>

\*\* Were excluded in the first stage of sampling as the number and/or percentage of female employees is negligible compared to the size of the population

In the second stage, 76 respondents were selected from each company. However, the number of respondents selected from one company was doubled (152) as it represented two clusters in stage 1 due to the large cluster size. Participants for the study were chosen by adapting the Simple Random Sampling approach. The updated list of employees maintained by the HR department was considered in the sampling frame. In some cases, the factories were unwilling to share the list of employees, and we requested their support in selecting the individual

respondents. The selected factory workers were approached through the respective head of the department/line manager or through the contact details received from the HR department. In some factories, management arranged a separate place to conduct the interviews and the selected participants were sent on a roster basis.

## 2.2. Calculation of Sample Size

The standard sample size calculation formula for proportions with a finite population was used to calculate the minimum required sample size (Cochran, 1977). Finite Population Correction (FPC) was calculated considering population size (N) as 9,412. The minimum sample size (n) was calculated for  $\pm 5\%$  margin of error (E) and a 95% confidence interval. The percentage of intended pregnancies among FFW (P) was assumed to be 50% (as there was no reliable historical data available) generating the largest sample

size. The design effect was considered 1.5 to handle the reduction of precision due to sampling design compared to simple random sampling which may happen in the selected cluster sampling approach. The study over-sampled to accommodate possible non-responses assuming the non-response rate is 10%. The final minimum sample size calculated was 608, allocated proportionally among seven selected factories as explained in the previous section. Annexure 1 provides more details on the calculation of sample size.

## 2.3. Inclusion and Exclusion Criteria

### 2.3.1. Inclusion Criteria

The following individuals were included in the study.

- 01) Female employees aged between 18 to 49 years currently working in KgEPZ and who have worked for more than one year (12 months) at the time of the interview. .
- 02) Respondents were selected irrespective of their marital status. Therefore, the individuals who were never married, currently married, widowed, divorced and living together were included in the study.

- 03) Respondents were selected irrespective of their ethnicity, religion, place of residence, educational status, socioeconomic status, pregnancy status, disability status, current job and/or the nature of the tasks that they are performing in the current position.
- 04) Full-time, part-time, and contract basis employees. (Participants were selected irrespective of the nature of their current employment).

### 2.3.2 Exclusion Criteria

The following individuals were excluded from the study.

- 01) Those aged below 18 years and above 49 years at the time of the interview, as this research focused on the FFW of reproductive age. WHO defines the

reproductive lifespan of a woman as 15 to 49 years (WHO, 2006). The legal age for marriage in Sri Lanka is 18 for both men and women. More than 90% of unsafe abortions have been reported among married women in Sri Lanka (De Silva, et al., 2006; Suranga & De Silva, 2020;



Suranga, 2019; Senanayake, et al., 2008). Considering the above facts and the sensitive nature of the study, we excluded children under 18.

02) Employees who have worked less than one year in the KgEPZ and the recent female recruits. This was decided in consultation with the EPZ management as

there was a high turnover during the first year, and they hadn't completely internalized into the EPZ system and culture. Investigators were of the view that employees who worked at least one year within the EPZ are more representative as the first year is considered to be the year of internalization with a high turnover rate.

## 2.4. Data Collection Instrument

An interviewer administered interview schedule to gather the required information from the selected respondents. The tool was developed by adopting what was used in a previous study to measure the knowledge, attitudes and practices of adults toward induced abortion in Sri Lanka by the principle investigator (Suranga, et al., 2016; Suranga M, et al., 2017; Suranga, et al., 2017; Suranga, et al., 2015). The ethical approval for the original study was received from the Ethical Review Committee of the Sri Lanka Medical Association (ERC/13-049). As the original tool was developed in consultation with a team of experts, ensuring content validity, and considering successful implementation, major changes were not incorporated in the tool. Especially the sections related to measuring knowledge, attitudes and practices were not changed as the objectives were similar in both studies. Only a few introductory questions were included relating to the EPZ context. The questionnaire was prepared in English initially and then translated to Sinhala and Tamil (local languages) to develop consistency in explaining the questions to the respondents. Show cards were used for the questions related to Likert Scales, where applicable, for

the convenience of the respondents and interviewers (Annexure 5).

The tool mainly included closed-ended questions, with responses on a Likert Scale that can be analyzed quantitatively. Some open-ended questions were included to support the quantitative findings. There were pre-planned questions to gather information about the respondents' demographic profile and socioeconomic status, knowledge, attitudes and practices on unintended pregnancies and unsafe abortions.

Knowledge of unintended pregnancies and unsafe abortion includes sub-themes such as knowledge on overcoming unintended pregnancies/contraception, knowledge of the current abortion law and knowledge of abortion services. Questions on attitudes towards the country's law governing induced abortion were measured using a set of statements with a Likert Scale. The last section of the questionnaire was developed to understand the practices related to unintended pregnancies and unsafe abortion, including sexual behaviour, use of contraceptives /emergency contraceptives,

unintended pregnancies and unsafe abortion  
(Annexure 02: Interview Schedule).

## 2.5. Data Collection

### **(A) Collection of secondary data**

An environmental scan of literatures and a secondary data collection procedure was operationalized to collect secondary data which was used as additional data to triangulate the findings of the current study. The environmental scan of literatures and evidence synthesis were started at the time of preparation of the research proposal and continued up to completion of the final report.

### **(B) Pre test**

A pre-test was conducted using ten respondents to test whether they could understand the questions, terms and words of the questionnaire. Ten respondents were selected purposively from the FFW who attended The Family Planning Association's (FPA Sri Lanka)<sup>1</sup> Suwa Sewa Centre located in the KgEPZ premises. FFW were selected to represent married and unmarried and different age cohorts. Only minor changes were incorporated as the study used a tool validated by a previous study.

### **(C) Survey**

The interview schedule was administered by a team of well-trained female survey staff with adequate experience in field surveys. A female interviewer, fluent in the Tamil language was used to administer the tool among a few respondents willing to participate in the study in the Tamil medium. These interviewers are social science graduates with previous experience in conducting field interviews in social research. Some permanent staff attached to FPA Sri Lanka's Suwa Sewa Centre in Koggala, having prior experience in SRH related interventions, were also engaged in the survey. Formal training on the data collection tool and ethical aspects was conducted before the data collection commenced (Figure 05). The Institute for Participatory Interaction in Development (IPID), a recognized organization with experience in conducting social research and evaluation supported FPA Sri Lanka for the field survey.

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<sup>1</sup> Established in 1953, The Family Planning Association of Sri Lanka (FPA Sri Lanka) serves as a non-governmental organization (NGO) that explores innovative and challenging processes of Family Planning in Sri Lanka. FPA Sri Lanka believes that reproductive Health is a fundamental human right of every woman and man throughout her/his life cycle. FPA Sri Lanka is an accredited member of the International Planned Parenthood Federation (IPPF).



**Figure 5:-** Training of the field survey team on the data collection tool and ethical considerations

The field data collection was mainly conducted using an electronic and online data collection platform (KoBoToolbox<sup>22</sup>) to enhance the data quality with adequate supervision. In some cases, paper based questionnaires were used to conduct the interview, which the respective interviewer then entered in the KoBoToolbox on the same day. An experienced researcher was engaged as the field supervisor to supervise the data collection process online and in the field. Data collection was done from December 2021 to May 2022.

The interviews were conducted at the FPA Sri Lanka Suwa Sewa Centre located at the Bol premises, the respective factories, or any

other place within the EPZ premises, which the respondent selected based on her convenience. The medical centres attached to some factories were used to interview the clients based on their choice. Some factories have staff restrooms attached to each department which were used to conduct the interviews. The principal investigator discussed with the factory management to arrange a suitable place to conduct the interview before the data collection. As per the initial arrangements with factory management, line supervisors permitted respondents for 20-30 minutes to participate in the interviews on a rotational basis. Ex: - only one staff member was released from one working unit at a time.

## 2.6 Ethical Considerations

**a) Potential benefits to participants:** Like in other developing countries with

restrictive abortion laws, information regarding the prevalence of abortion in

<sup>22</sup>KoBoToolbox is an online data collection facility which supports mobile technology (KoBo Mobile App)

founded in 2005 by Phuong Pham and Patrick Vinck. Source:- <https://www.kobotoolbox.org/kobo/>

Sri Lanka is scarce. Health care providers and policymakers are very much aware of the magnitude of the problem. This study aims to contribute toward a better understanding of knowledge, perception, attitudes and practices of the FFW on unintended pregnancies and unsafe abortion. The results of this study will provide information which would assist in developing health policies and focused interventions in EPZs for the government of Sri Lanka and other development agencies. Communities and participants involved in the research will also indirectly benefit from these changes. They will benefit from the results of the study through better programmatic interventions. In addition, the members of the community taking part in the field research shall gather experience in relation to the study and the subject matter as a whole through the training, capacity building and engagement in the interviews. A copy of the final report will be shared with the BoI and other relevant stakeholders to take important actions including developing the programme for the betterment of the factory. However, there was no payment for respondents.

**b) Possible hazards to the participants:** No direct risks to research subjects were identified in relation to this study as no physical interventions were involved other than the field data collection. Information collected from the field was kept under secure conditions with anonymity and was not shared with other stakeholders except the study team.

**c) The procedure for initial contact of participants:** FPA Sri Lanka has established a Service Delivery Point at EPZ Koggala. The necessary authorization was obtained from the BoI initially and the BoI coordinated with respective factories to request permission. The allocated number of respondents from each factory were randomly selected. The selected factory workers were approached through the respective head of the department or through the contact details received from the HR department.

**d) The procedure for obtaining informed consent:** Participants were provided with an information sheet (*Annexure 03*) and a consent form (*Annexure 04*) indicating the purpose of the study and all benefits or risks to the participants. The information sheet was handed over to the participants during the first visit / contact. If the participant could not participate in the interview during the first visit (which was the case most of the time), an appointment to conduct the interview and/or contact details were collected for the second visit. If the participant lost the information sheet, a new one was provided during the second visit. Adequate information was provided to all the participants facilitating them to make informed decisions while signing the consent form before the start of the interview. Participants were provided with an opportunity to clarify any misunderstanding before the initiation of the questionnaire. These forms were available in all three languages (Sinhala, Tamil and English). If the respondent was

illiterate, the researcher explained the content in his/her speaking language.

**e) The information (written/oral) provided to the participants:**

The respondents were given an information sheet (Annexure 03) in all three languages (Sinhala, Tamil and English). If the respondent was illiterate, the researcher explained the content in his/her speaking language. The investigator's contact information including mobile numbers were provided to the participants in the information sheet.

**f) The procedure for ensuring that subjects understood the information provided and withdrawal of consent:**

The above method of informed consent was completed before the interview. The respondents were given the option to withdraw consent under the below paragraph, which was included in the consent form:

*"You may withdraw your consent to participate in this study at any time during the interview despite consenting to take part earlier, with no loss of benefits. Please notify the Field Research Officer as soon as you decide to withdraw your consent and your responses will not be included in the study."*

**g) Privacy and confidentiality of the participants:**

Data was collected without the respondent's names or other contact details. Consent for participation was obtained in a separate consent form without any cross reference to the data recorded. Field data collectors were trained on ethical considerations and

maintaining privacy and confidentiality. Interviews were conducted in a highly confidential environment (one to one) without involvement and hearing of outsiders. The interviews were conducted either at the FPA Sri Lanka Suwa Sewa Centre located at the Bol premises or respective factories, based on the convenience of the respondent.

The data were stored under lock and key for offline records and as password-protected files for online records. The field researchers were responsible for data security at the field level. Upon the data analysis and preparation of the report, the principal investigator shall discard all field data stored under this study. Therefore, the data will only be kept within storage until the delivery of the final report.

**h) Privacy and confidentiality of the enterprises:**

During the initial discussions, the Board of Investment and the management of some individual factories requested not to disclose their names and identity as proof of participation for this study. Therefore, the names and contact details of the respective factories that participated in this study were not presented in all the reports and will not be shared with any third party during and after the completion of the study.

**i) Rights of the participants:**

The respondents were given a provision to withdraw consent for participation. Contact details of the investigators and the Ethical Review Committee were

included in the information sheet to register complaints, obtain further information etc. (Annexure 02). The study's findings and recommendations will be published in national and international health related journals. However, there is no direct provision to make the study product available for research participants/subjects.

- j) The plan for dissemination of study findings:** Final results will be analyzed through scientific and lay reports and presentations. An electronic copy of the full report will be published on the FPA Sri Lanka website which will be available to the general public. The final report, including recommendations, will be developed, presented and published in national or international health related journals targeting key decision makers and policymakers. Copies of the final report will be circulated among key governmental and non-governmental institutions in the sector such as the Bol, Human Resource units of the factories, Family Health Bureau (FHB) Health Education Bureau (HEB), UNFPA, IPPF, etc.

**k) Conflict of interest:** No conflict of interest

- l) Referral services:** - Although this is not a clinical trial, there can be situations where some clients require SRH related services. There were arrangements for referral services in case the interviewers identified clients who needed SRH services during the interview (Ex:- A respondent who had an unwanted pregnancy, a respondent who needed medical services for incomplete abortion, etc). The initial arrangements were to refer them to the FPA Sri Lanka "Suwa Sewa Centre" established at the KgEPZ. The FPA Sri Lanka Suwa Sewa Centre is a static clinic that has operated for the last 12 years to provide services for EPZ workers with the support of a Medical Officer of Health and Regional Director of Health Services.

- m) Ethical Review and Approval:-** The study protocol was submitted to the Ethical Review Committee of the Sri Lanka Medical Association (ERC-SLMA). Ethical approval to conduct the study was received on the 26<sup>th</sup> of July 2021 (ERC 21 – 013). Please refer to Annexure 06 for the letter of ethical approval.

## 2.7. Special Requirements for COVID-19

This research was conducted during the COVID-19 pandemic situation in Sri Lanka. All the front-line staff (interviewers and field supervisors) were trained on COVID-19 precaution guidelines of the Ministry of Health, Sri Lanka. Further, all the field activities were planned to adhere to the United Nations

Guidelines on conducting field surveys during the COVID-19 pandemic (United Nations, 2020). As discussed, data was collected using the KoBoToolbox mobile app to avoid physical transactions of papers during the data collection and entry process. Wearing face masks by both the interviewer and the

respondent was considered mandatory. A distance of one meter was maintained as instructed by the Ministry of Health. The

required COVID-19 Personal Protective Equipment was provided to all the field data collectors by FPA Sri Lanka

## 2.8. Data Cleaning and Analysis

There was no requirement for data entry as the online data collection mechanism using the KoBoToolbox platform was operationalized. However, a primary data quality review was conducted to ensure the quality of data collected during the survey. Records with inconsistent and incomplete information were rejected and were not included in the data analysis. Quantitative data were entered into the statistical application using appropriate coding. Data analysis was performed using statistical software, IBM SPSS (v26).

**a) Descriptive Statistics** – Demographic profile and background information of the respondents such as age, gender, ethnicity, religion, years of formal education, marital status, number of pregnancies, number of living children, experience with using contraceptives and emergency contraceptives, experience with unintended pregnancies and unsafe abortion, were analyzed using descriptive statistics to explore the situation.

**b) Level of knowledge** – The broader theme and level of knowledge were divided into two sub-themes (1) Knowledge on overcoming unintended pregnancies, (2) Knowledge of unsafe abortion and current abortion law. The level of knowledge was measured using a set of closed ended questions with three

options (True, False, and Don't Know). Non-parametric hypothetical tests were used for analysis as the normality assumptions were violated for most of the variables.

**c) Attitudes towards abortion law** - Results of a 1-5 Likert Scale were used to analyze the respondents' attitudes toward abortion law. The extent of liberalization of respondents' attitudes towards abortion was analyzed to identify three groups; Liberal (Composite score above 30), Moderate (Composite score 20 to 30) and Conservative (Composite score below 20). Non-parametric hypothetical tests were used as the normality assumptions were violated for most of the variables.

**d) Factors associated with Knowledge, Attitudes and Practices:**

**i. Factors associated with Knowledge:**

**Step 01:-** In the preliminary stage, we used one question at a time (Ex: - Chi-Square Test, Fisher's Exact Test) to find the associations.

**Step 02:-** Two aggregated scores to measure (1) Knowledge on overcoming unintended pregnancies and (2) Knowledge of unsafe abortion were developed. The scores

represented the total number of questions correctly answered by the respondents. The internal validity of the two scales were tested. Using hypothetical tests and correlation analysis, these scales were used to analyze the associated factors.

**ii. Factors associated with Attitudes: -**

**Step 01:-** We considered each variable at a time and measured the attitude towards abortion to perform hypothesis tests (Ex: - Chi-square Test, Fisher's Exact Test) to find the associations.

**Step 02:-**A previous study conducted by the principal investigator using the same data collection tool developed a scale to measure the attitudes toward abortion (Suranga M, et al., 2017; Suranga, et al., 2015). The procedure adopted is described below.

The respondent's level of agreement for the provision of legal abortion in 10 specific circumstances was collected using a 1 to 5 Likert Scale (Strongly disagree to strongly agree). The widely accepted methodology was the additive scale. An answer for each statement was given a score of 1 to 5, which were summed up to measure attitudes towards abortion (Elizabeth, et al., 1993; Finlay, 1981;

Harris & Mills, 1985; Emerson, 1996; Boggess & Bradner, 2000; Wilcox, 1992; Walzer, 1994). This aggregated score ranged from 10 to 50, where lower values reflected conservative attitudes towards induced abortion and higher scores reflected liberal attitudes towards induced abortion. The scale shows an acceptable level of internal validity with 0.883 Cronbach's alpha (Tavakol & Dennick, 2011). The tool used to measure abortion attitudes was adopted in a Sri Lankan context from a standard data collection tool, used and validated in previous studies in other countries (Finlay, 1981; Harris & Mills, 1985; Boggess & Bradner, 2000; Walzer, 1994).

The current study used the same method (as the same data collection tool was used). This scale used hypothetical tests and correlation analysis to analyze the associated factors.

**iii. Factors associated with Practices: -**

We considered each variable related to practices (mostly categorical) separately and applied hypothesis tests to identify associated factors. Chi square test, Fisher's exact test and other non-parametric tests were adopted.



## 2.9 Limitations of the Study and Recommendations for Future Studies

The study was conducted in the KgEPZ, located in a semi-urban setting where the<sup>3</sup>). It can be assumed that the situation of unintended pregnancy and induced abortion in other EPZs (especially the EPZs located in urban settings and diverse ethnic groups) are significantly different from the KgEPZ. Therefore, the results of this study cannot be generalized to those EPZs. On the other hand, past studies show that ethnicity and religion are strong determinants of knowledge and

The subject of induced abortion is highly stigmatized in Sri Lankan society. Sri Lankan women generally do not like to discuss and disclose their abortion history. Most of the time, the respondents tend to provide socially desirable answers rather than the real facts. Therefore, researching induced abortion is challenging (Senanayake, et al., 2008). The situation is more complex, when it comes to unmarried youth as pre-marital sex is not accepted in Sri Lankan society. Therefore, some estimates of this study are considered to be under-estimates (Ex: - Prevalence of unintended pregnancies and unsafe abortion among youth). This study used an interviewer administered questionnaire schedule to collect information. Future studies may try to use self-administered questionnaires with required support from field researchers,

Sinhala Buddhist population is the majority (99.72)

attitudes towards induced abortion (Suranga, et al., 2015). However, this study couldn't assess those factors as there was less number of respondents from the minority ethnic groups. Therefore, it would be beneficial to replicate this study in the EPZs located in more urban settings with considerable ethnic diversity.

reducing the tendency to provide socially desirable answers.

This study was conducted in the last quarter of 2021 and 2022 when the country was highly affected by the COVID-19 pandemic and the post COVID economic crisis. Due to organizational policies, obtaining permission to conduct physical interviews in some factories was difficult. We had to wait until the COVID-19 pandemic was managed to gain entry permission. Also, it was difficult for the factory to release staff from some units and departments, due to the target pressure to cover up the back-load and inefficiencies created by electricity breakdowns and fuel shortages. However, in close coordination with the factory management, our field survey team overcame these challenges, although this resulted in the study being concluded later than scheduled.

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<sup>3</sup> Percentage of Sinhalese residents in the Habaraduwa Divisional Secretariat Division (62,219 Sinhalese out of 62,389)  
Data Source:- Census of Population and Housing (DCS, 2012).

## RESULTS AND DISCUSSION

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This chapter presents a descriptive analysis of the socio-demographic profile of the respondents and comprehensive analysis of their knowledge, attitudes and practices towards unintended pregnancies and induced

abortion. In addition, this chapter includes bivariate statistical analysis, with necessary interpretations to identify the factors associated with the knowledge, attitudes and practices of the respondents.

### 3.1. Profile of the Respondent

Valid responses were received from 585 respondents resulting in an acceptable response rate (96%). Some responses were ignored during the data cleaning stage as those responses were incomplete. Data inconsistency issues were minimum due to the data validation facility available in the KoboToolBox.

As described in Table 2, the mean age of the respondents was 31 years (SD = 8.67) ranging from 18 to 49 years. Almost one-third of the respondents (31%, n=180) were young persons (age<25 years). More than two-thirds of the respondents (67%, n=392) were ever married. More than half of the respondents (51%, n=297) had been pregnant at least once in their lifetime. Of the 297 respondents who had been pregnant at least once, 27% (n=8) reported more than two pregnancies. Nine respondents had become pregnant five or more times. Two respondents in the sample

who were never married had become pregnant during their lifetime. More than half of the respondents (52%, n=307) had no children by the time of conducting the study, whereas more than one-third of the respondents (38%, n=221) had one or two living children.

Almost all the respondents (97%, n=569) were educated up to GCE Ordinary Level or further, with an average of 12 years of formal education (SD = 1.98 years). Around one-tenth of the respondents (11%, n=66) had undergone higher education after the GCE Advanced Level examination. On average, respondents had worked in the KgEPZ for around 5 years (SD=4.50). Almost half of the respondents (47%, n=277) had worked in the KgEPZ (either in the same factory or in a different factory) more than 3 years. 86 respondents (15% of the sample) had 10 years or more work experience in the KgEPZ.

**Table 2:-** Profile of the respondents

Variable	Level	Number of Respondents (n=585)	Percentage	Cumulative Percentage
Age (Number of years)	Below 25	180	31%	31%
	25 and above	405	69%	100%
Level of Education	Up to Grade 8	16	3%	3%
	GCE O/L*	363	62%	65%
	GCE A/L**	140	24%	89%
	Above GCE A/L	66	11%	100%
Marital status	Currently Married	379	65%	65%
	Never Married	193	33%	98%
	Divorced	10	2%	99%
	Widow	1	0%	100%
	Other	2	0%	100%
Number of Pregnancies	None	288	49%	49%
	1 to 2	217	37%	86%
	3 or more	80	14%	100%
Number of Living Children	No Children	307	52%	52%
	1 to 2	221	38%	90%
	3 or more	57	10%	100%
Working Experience in the KgEPZ	1 to 3 Years	308	53%	53%
	4 to 6 Years	119	20%	73%
	7 to 9 Years	72	12%	85%
	10 Years and more	86	15%	100%
Designation	Managers, Assistant Managers / Executives	20	3%	3%
	Supervisors / Section Leaders / Office Assistants	86	15%	18%
	Workers / Associates	479	82%	100%

Note: - \*GCE O/L = General Certificate of Education Ordinary Level, \*\*GCE/AL = General Certificate of Education Advanced Level

The sample was considered fairly representative in terms of employment categories (Managers/Executives=3%, Supervisors/Section leaders=15% and workers/associates=82%). Since the KgEPZ is situated in an area where the majority represent Sinhala Buddhists, the sample

contained less number of respondents from other ethnic groups. There were 579 Sinhalese (99%) and 06 Tamils (01%) in the sample. Similarly, the sample contained 572 Buddhists (97.8%), 4 Hindus (0.7%), 6 Roman Catholics (1.0%) and 3 Christians (0.5%).

### 3.2. Knowledge about Unintended Pregnancies

This study assessed the respondents' knowledge of two main aspects; (1) Knowledge of overcoming unintended pregnancies, (2) Knowledge of unsafe abortion, including abortion law. Eight structured dichotomous questions were used to measure the respondents' knowledge of overcoming unintended pregnancies, whereas knowledge of unsafe abortion was measured using six dichotomous questions.

Results show that the respondents' knowledge of overcoming unintended pregnancies is considerably low (Table 03) except for a few aspects. Only one-fourth (25%, n=145) of the respondents were aware that a girl could become pregnant after a sexual act, even before the first menstruation. Less than half of the respondents (40%, n=234) knew that a girl or woman could become pregnant by an *intercrural* sexual act. Less than one-third of youth respondents (31%, n=56) were aware of the above fact. This misconception may significantly contribute to unintended pregnancies, especially among young, unmarried factory workers.

Surprisingly, around one-third of the FFW (67%, n=393) were unaware of the fertile period. Knowledge about the fertile period

was even lower among the youth respondents. Only 51% (n=92) of them knew about the fertile period. Only 63% (n=371) of respondents were aware of the possibility of contraceptive failure. It is important to note that the respondents' knowledge of emergency contraceptives is lower than all the above aspects. Only 26% (n=154) of the respondents were aware of the effective time period to take an ECP to prevent a pregnancy. Others were of the impression that ECPs can be taken within 07 days of an unsafe sexual encounter. As per the regulations in the country, there is no requirement for a prescription to purchase emergency contraceptives from pharmacies. However, only 33% (n=193) of the FFW were aware of this fact. Others were of the impression that a valid prescription from a medical doctor is necessary to purchase ECP from the pharmacies in Sri Lanka. The situation is worse when it comes to the youth cohort. Only 14% (n=25) of the youth respondents were aware of the effective timing of the ECPs whereas less than one-fourth (23%, n=42) were aware that a prescription is not required to purchase ECPs. Table 03 presents the number and percentage of respondents who correctly answered knowledge questions on pregnancy and overcoming unintended pregnancies, disaggregated by the age category.

**Table 3:-** Number and percentage of respondents who correctly answered the knowledge questions on pregnancy and overcoming unintended pregnancies disaggregated by age category.

	Age				Total (n=585)		Ch <sup>2</sup> test for association X <sup>2</sup> (P)
	Below 25 (n=180)		25 and Above (n=405)		#	%	
	#	%	#	%			
01) A girl can become pregnant after a sexual act even before the first menstruation	39	22%	106	26%	145	25%	1.357 (0.244)
02) A girl or women can become pregnant following an intercrural sexual act	56	31%	178	44%	234	40%	8.560 (0.003)**
03) There are specific days in the menstrual cycle where the chance of becoming pregnant is relatively high	92	51%	301	74%	393	67%	30.446 (0.000)**
04) Any modern contraceptive method is not 100% secure in preventing a pregnancy	83	46%	288	71%	371	63%	33.572 (0.000)**
05) There are some drugs which can be taken even after an unsafe sexual encounter to avoid a pregnancy	111	62%	298	74%	409	70%	8.409 (0.004)**
06) Emergency contraceptives must be taken within 7 days after an unsafe sexual encounter in order to avoid an unintended pregnancy	25	14%	129	32%	154	26%	20.732 (0.000)**
07) A valid prescription from a medical doctor is necessary to purchase Emergency Contraceptive Pills from the pharmacies in Sri Lanka	42	23%	151	37%	193	33%	10.971 (0.001)**
08) Frequent use of emergency contraceptives do not have adverse effects.	122	68%	310	77%	432	74%	4.957 (0.026)*

**Note:-** # = Number of Respondents, % = Percentage of Respondents, \* = Statistically significant association at 95% confidence level, \*\* = Statistically significant association at 99% confidence level

We compared the current study's findings with the results of a community based household survey conducted in 2017 among adult (aged between 19 and 49) residents in Colombo, Sri Lanka, using the same measures (Suranga, et al., 2017). Notably, the knowledge level of FFW was considerably lower than the female residents in Colombo in most aspects. For example, around 60% of

Colombo's female residents were aware that a girl could become pregnant after a sexual act, even before the first menstruation. However, only 25% of the FFW who participated in the study were aware of this fact. However, a higher proportion of FFW (70%) were aware of the ECP compared to the female residents in Colombo. (48%).

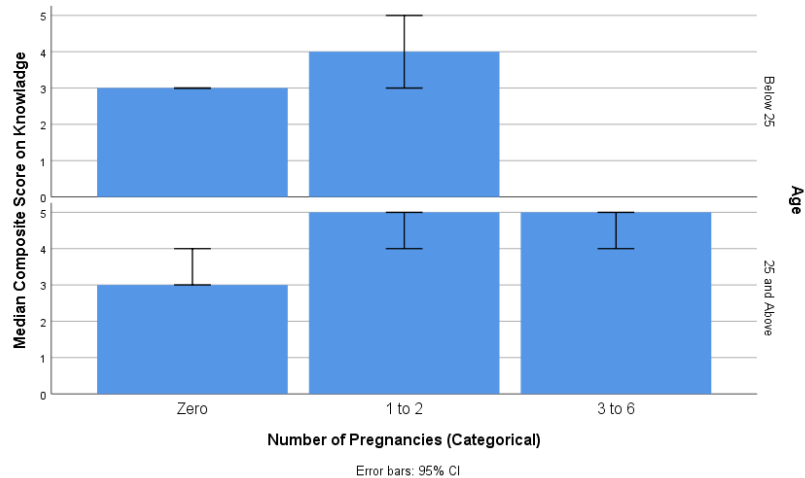
It is important to note that the knowledge of youth FFW (age below 25 years) on overcoming unintended pregnancy was considerably lower than that of adults. Fewer youth respondents answered all the knowledge questions correctly than the

adults. This association was statistically significant for seven knowledge questions out of eight at a 95% confidence level. These facts clearly show an additional risk of unintended pregnancies among youth FFW compared to adults.

### 3.2.1 Factors associated with Knowledge on Unintended Pregnancies

Age, marital status, number of pregnancies, number of living children, history of using contraceptives / emergency contraceptives, history of unintended pregnancy / unsafe abortion and years of working experience in the KgEPZ were associated with the

respondents' knowledge of overcoming unintended pregnancies. Interestingly, there were no statistically significant association between respondents' knowledge with years of formal education and the respondents' designation (in the particular factory).



**Figure 05:** - Knowledge on unintended pregnancies by age and number of pregnancies

Adults tend to answer more questions correctly than young (Age below 25) respondents. Years of working experience in the KgEPZ show a positive association with knowledge of overcoming unintended pregnancies. This may be due to the confounding effect of age. There was no statistically significant difference in knowledge between the higher and lower designated staff.

Married respondents with a higher number of pregnancies and living children tend to have a better knowledge of overcoming unintended pregnancies (Figure 04). Respondents who have ever used contraceptives or emergency contraceptives tend to have better knowledge than the respondents who do not have such experiences. Interestingly, although the causality is uncertain, FFW who have a history

of unintended pregnancies and unsafe abortion tend to have better knowledge of overcoming unintended pregnancies. This maybe because those respondents may have got a chance to learn these aspects when they experienced the unintended pregnancy or

unsafe abortion. It is evident that factory workers had learnt and acquired information on unintended pregnancies as and when they were exposed to life events rather than learning from formal education.

**Table 4:-** The median number of correct answers provided to the knowledge questions on overcoming unintended pregnancies disaggregated by associated factors

Variable	Level	Number of Respondents (n=585)	Median SCORE	Test for association		r (p)
				Mean Rank	Significant	
Age (Years)	Below 25	180	3	221	@ 0.000**	0.274 (0.000)**
	25 and Above	404	4	325		
Years of formal education	Up to GCE O/L	378	4	295	@ 0.641	-0.04 (0.924)
	Above O/L	206	4	289		
Working Experience in the KgEPZ	Less than 5 years	355	4	278	@ 0.006**	0.075 (0.068)
	5 Years and more	229	4	316		
Marital Status	Never Married	193	3	214	@ 0.000**	
	Ever Married	389	4	332		
Number of Pregnancies	Zero	288	3	234	# 0.000**	0.307 (0.000)**
	1 to 2	216	5	353		
	3 to 6	80	5	342		
Number of Living Children	Zero	307	3	241	# 0.000**	0.293 (0.000)**
	1 to 2	220	5	350		
	3 to 6	57	5	351		
Designation	Workers / Associates	478	4	288	@ 0.119	
	Higher grade staff	106	4	316		
Ever used any kind of contraceptive method?	Yes	246	5	359	@ 0.000**	
	No	336	3	243		
Ever used emergency contraceptive pills	Yes	66	5	407	@ 0.000**	
	No	518	4	278		
Has a history of unintended pregnancy	Yes	65	5	374	@ 0.000**	
	No	517	4	283		
Has a history of induced abortion	Yes	22	5	367	@ 0.035*	
	No	560	4	290		

**Note:** - Median SCORE = Median number of correct answers provided by the respondents, @ = Probability value of Mann-Whitney U test, # = Probability value of Kruskal-Wallis test, r = Spearman Rank Correlation Coefficient, P = Probability, \* = statistically significant at 95% confidence level, \*\* = statistically significant at 99% confidence level

### 3.3. Knowledge of Unsafe Abortion and Abortion Law

Knowledge of unsafe abortion and the law governing induced abortion among the general population, especially among women and girls, is important to prevent such incidences in their lives. This study aimed to assess the knowledge of the FFW on unsafe abortion and the Sri Lankan law governing induced abortion in the country. Table 05 shows the number and percentage of respondents who correctly answered the six knowledge questions on unsafe abortion in Sri Lanka disaggregated by the age category.

Results show that the respondents' knowledge of abortion and abortion law is considerably poor. Only one-tenth (11%, n=64) of the respondents were aware of the situations in which abortion is legal in the country. More than one-third (34%, n=199) were of the view that abortion is illegal in all situations, including to save the mother's life. One-tenth (9.3%, n= 54) were of the impression that abortion is legal to protect the physical and mental health of the mother. Around 15% (n=90) of respondents wrongly believe that abortion is within the law if it is performed to terminate a pregnancy with congenital abnormalities in the fetus. A significant portion of the respondents (6.2%, n=32) were of the view that abortion is allowed in the case of rape or incest. There

were 4 respondents who believed that induced abortion is legal in broader scenarios. Only 11% knew the situations in which abortion is permitted within the country (Ex: - To save mothers' life). Around two-thirds (65%, n=379) of the respondents wrongly believed that providing treatment for a woman who has gone through an illegal abortion is an offence as per the present abortion law. Only 55% (n=320) were aware that a pregnant woman can get free, safe abortion services from a government hospital, if the medical condition during the pregnancy is considered a threat to her life.

In line with the findings of the current study, a previous study (2017) conducted among the residents in Colombo, Sri Lanka shows that only 15% percent of female participants were aware of the conditions in which abortion is legal in Sri Lanka. Even a higher proportion of them (73%) wrongly believe that the provision of treatment for a woman who has gone through an illegal abortion is an offence as per the present abortion law. Only 14% of respondents were aware that a pregnant woman can get free, safe abortion services from a government hospital, if the medical condition during the pregnancy is considered a threat to her life. (Suranga , et al., 2017).



**Table 5:-** Number and percentage of respondents who correctly answered the knowledge questions on unsafe abortion in Sri Lanka, disaggregated by age category

Statement	Age				Total (n=585)		Ch <sup>2</sup> test for association X <sup>2</sup> (P)
	Below 25 (n=180)		25 and Above (n=405)		#	%	
	#	%	#	%			
01) The most common reason mentioned by the illegal abortion seekers in Sri Lanka is to terminate the first pregnancy after the marriage.	82	46%	246	61%	328	56%	11.666 (0.001)**
02) Majority of Sri Lankan women who undergo illegal abortion are unmarried youth who were having premarital sex.	26	14%	84	21%	110	19%	3.236 (0.072)
03) Induced abortion is legal in Sri Lanka under some circumstances.	52	29%	147	36%	199	34%	3.043 (0.081)
04) If yes, in which situations is induced abortion legal in Sri Lanka?	12	7%	52	13%	64	11%	4.873 (0.027)*
05) Provision of treatment for a woman who has gone through an illegal abortion is an offence as per the present abortion law.	59	33%	147	36%	206	35%	0.676 (0.411)
06) A pregnant woman can get free safe abortion service from a government hospital, if the medical condition she has with the pregnancy is considered as a threat to her life.	75	42%	245	60%	320	55%	17.826 (0.000)**

**Note:-** # = Number of Respondents, % = Percentage of Respondents, \* = Statistically significant association at 95% confidence level, \*\* = Statistically significant association at 99% confidence level

The knowledge level of youth (girls below 25 years of age) was compared with the adults. The proportion of youth respondents who answered correctly is much lower than adult

respondents for all six knowledge questions. For example, only 25 (7%) girls knew the situations in which induced abortion is legal in Sri Lanka.

### 3.3.1 Factors Associated with Knowledge of Unsafe Abortion

This study intended to identify the factors associated with the knowledge of unsafe abortion. As described in the methodology section, we developed a new variable which reflects the “number of correct answers provided to the six knowledge questions,”

which ranged from zero to six. The lower values of the new indicator indicate a poor level of knowledge, whereas higher values indicate a better level of knowledge. The median number of correct answers provided by a respondent is two.

**Table 6:-** Median number of correct answers provided to the knowledge questions of unsafe abortion disaggregated by associated factors and test results for statistical association

Variable	Level	Number of Respondents (n=585)	Median SCORE	Test for association		r(p)
				Mean Rank	Significant	
Age (Years)	Below 25	180	2	245	® 0.000**	0.196 (0.000)**
	25 and Above	404	2	314		
Years of formal education	Up to GCE O/L	378	2	293	® 0.949	-0.016 (0.699)
	Above O/L	206	2	294		
Working Experience in the KgEPZ	Less than 5 years	355	2	283	® 0.077	0.065 (0.114)
	5 Years and more	229	2	308		
Marital Status	Never Married	193	2	272	® 0.031*	
	Ever Married	389	2	303		
Number of Pregnancies	Zero	288	2	274	# 0.015*	0.129 (0.002)**
	1 to 2	216	2	305		
	3 to 6	80	2	327		
Number of Living Children	Zero	307	2	275	# 0.017*	0.117 (0.005)**
	1 to 2	220	2	315		
	3 to 6	57	2	305		
Designation	Workers / Associates	478	2	283	® 0.077	
	Higher grade staff	106	2	308		
Ever used any kind of contraceptive method	Yes	246	2	315	® 0.005*	
	No	336	2	275		
Ever used emergency contraceptive pills	Yes	66	2	323	® 0.115	
	No	518	2	289		
Has a history of unintended pregnancy	Yes	65	2	291	® 0.945	
	No	517	2	293		
Has a history of induced abortion	Yes	22	2.5	378	® 0.014*	
	No	560	2	290		

**Note:** - Median SCORE = Median number of correct answers provided by the respondents, ® = Probability value of Mann-Whitney U test, # = Probability value of Kruskal-Wallis test, r = Spearman Rank Correlation Coefficient, P = Probability, \* = Statistically significant at 95% confidence level, \*\* = Statistically significant at 99% confidence level

As described in Table 06, age, marital status, number of pregnancies, number of living

children, history of using contraceptives and history of undergoing induced abortion

shows a statistically significant association with the respondents' knowledge of unsafe abortion and the abortion law. Adults had a better knowledge of unsafe abortions and abortion laws than the youth respondents (Age below 25 years). There is a tendency to improve their knowledge of abortion as they mature. Ever married respondents tend to have better knowledge than never married girls/women. Similarly, the FFW who reported a higher number of pregnancies and living children tend to have better knowledge of unsafe abortion. Respondents who have used any contraceptive method and have undergone induced abortion in their lifetime tend to have better knowledge of induced abortion than women who do not have these experiences. Years of formal education, current role/designation in the respective factory, and years of working experience in the KgEPZ do not show a statistically significant association with the respondents' knowledge of induced abortion.

In line with the results of the current study, a previous study (2016) conducted among the residents in Colombo, Sri Lanka found a weak association between formal education and knowledge related to abortion. Access to other sources of information shows a higher effect on developing abortion related knowledge. Access to most sources of information had a positive and statistically significant association with respondents' overall knowledge of abortion. Receiving abortion related information from the community level service providers such as Public Health Midwives (PHM), Public Health Nursing Sisters (PHNS) or Medical Officers of Health (MOH) has resulted in the highest

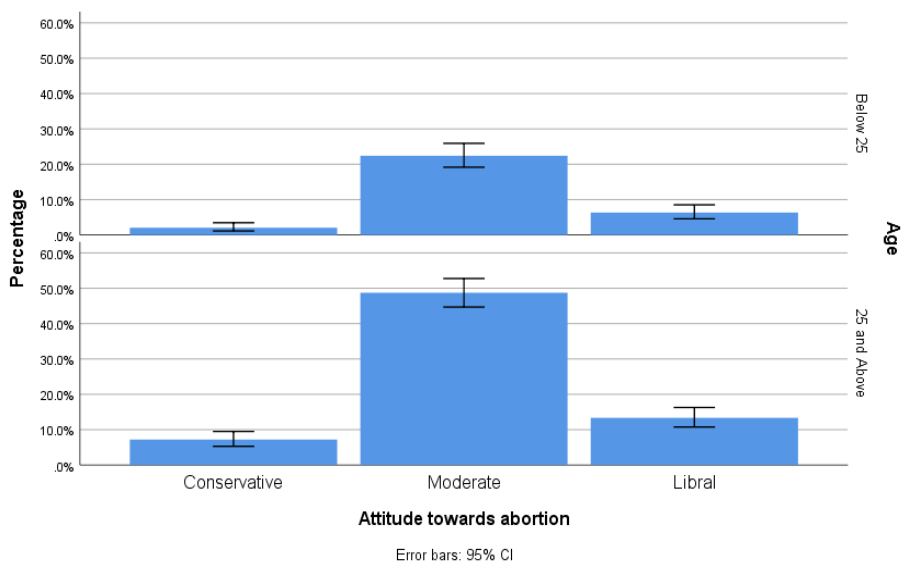
effect size (10%) over all other sources of information. Having access to a TV programme, movie, film or drama related to abortion and access to any TV/radio news on induced abortion during the past year demonstrated statistically significant associations and moderate effects (6% and 5% respectively) on respondents' knowledge of abortion. In addition, receiving information from printed media, including newspapers, leaflets, handouts, or any other articles, demonstrated statistically significant associations with a relatively low effect size (4%) on respondents' overall knowledge of abortion. Receiving abortion related information through informal discussions, the internet and family doctors had a very low effect size (3% and 2% respectively) on respondents' overall knowledge of abortion and related matters (Suranga, et al., 2016).

These facts indicate that the respondents' knowledge of induced abortion develops from various formal and informal sources of information (Ex:- Mass media, community health system, from peers, etc.) as and when the girl/woman is exposed to reproductive health related incidences (Ex:- Marriage, pregnancy, unintended pregnancy, abortion, etc.) with maturity rather than formal education in school or out of school. FFW have relatively fewer opportunities than other women to access these sources of information, especially to meet community based service providers which has proved to have the highest effect on building abortion related knowledge. Therefore providing adequate opportunities for FFW to access these kinds of information in the factory setting is important.

### 3.4. Attitudes -towards Induced Abortion and the Abortion Law

This study assessed the respondents' attitudes and perceptions toward the current abortion law and possible legislative changes. We used ten attitude statements to evaluate the respondents' attitudes which was measured using a five-point Likert Scale. However, we ignored the first statement in the analysis as it generated inconsistent results with other statements. Table 07 describes the number and percentage of respondents who agreed or strongly agreed to legalize abortion in Sri Lanka under different conditions, disaggregated by their age group. Results show that the attitudes of the FFW toward abortion are conservative. A significant portion of respondents (17%, n=102) do not want to legalize abortion even to save the mother's life which is allowed under the

current law. However, three-fourths of the respondents (75%, n=440) agreed to legalize abortion to terminate a pregnancy with fetal abnormalities, if the abnormality is lethal. However, only 48% (n=280) agreed to legalize induced abortion, if the fetus can survive with major abnormal conditions. Around half of the respondents agreed to legalize abortion to terminate pregnancy resulting from a rape (50%, n=290) or incest (46%, n=267). Less than one-fifth of the respondents wanted to legalize induced abortion for other conditions such as contraceptive failure, on account of economic hardships and on the request of the couple (husband and wife). Only 5% (n=31) agreed to legalize abortion at the woman's request.



**Figure 06:-** Attitudes towards the abortion law by age of the respondent

**Table 7:-** Number and percentage of respondents who agreed or strongly agreed to legalize abortion in Sri Lanka under different conditions disaggregated by age category.

Statement	Age				Total (n=585)		Ch <sup>2</sup> test for association X <sup>2</sup> (P)
	Below 25 (n=180)		25 and Above (n=405)				
	#	%	#	%	#	%	
01) The Government of Sri Lanka must legalize abortion to save the mothers' life.	144	80%	339	84%	483	83%	0.367 (0.544)
02) The Government of Sri Lanka must legalize abortion to terminate pregnancy resulting from a rape	84	47%	206	51%	290	50%	2.265 (0.132)
03) The Government of Sri Lanka must legalize abortion to terminate pregnancy resulting from incest	77	43%	190	47%	267	46%	0.131 (0.717)
04) The Government of Sri Lanka must legalize abortion to terminate a pregnancy with fetal abnormalities – lethal conditions of the fetus	111	62%	329	81%	440	75%	0.161 (0.688)
05) The Government of Sri Lanka must legalize abortion to terminate a pregnancy with fetal abnormalities – fetus may survive with major abnormal conditions	73	41%	207	51%	280	48%	7.016 (0.008)**
06) The Government of Sri Lanka must legalize abortion to terminate a pregnancy resulting from a contraceptive failure.	30	17%	50	12%	80	14%	4.508 (0.034)*
07) The Government of Sri Lanka must legalize abortion to terminate a pregnancy on account of bad economic conditions of the parents.	22	12%	31	8%	53	9%	3.456 (0.063)
08) The Government of Sri Lanka must legalize abortion on the request of the couple (both husband and wife).	44	24%	65	16%	109	19%	3.297 (0.069)
09) The Government of Sri Lanka must legalize abortion on the request of the woman.	14	8%	17	4%	31	5%	7.925 (0.005)**

**Note:-** # = Number of Respondents, % = Percentage of respondents, \* = Statistically significant association at 95% confidence level, \*\* = Statistically significant association at 99% confidence level

An article published in the Ceylon Medical Journal on the perception of the abortion laws in Sri Lanka produced consistent results.

Approximately one-tenth of the respondents (11%) did not agree with the current law which allows an induced abortion only to save the

life of the mother. However, a majority agreed to the legalization of abortion due to rape (65%), incest (55%) and pregnancies with lethal fetal abnormalities (53%). Less than one-tenth of respondents agreed with the legalization of induced abortion for other reasons such as contraceptive failure (6%), poor economic conditions (7%) and, on request (4%). The study concluded that although society rejects abortion on request, the majority are in favour of allowing abortions for rape, incest and fetuses with lethal abnormalities (Suranga, et al., 2016).

These facts highlight that the respondents were more likely to accept abortion in situations where the pregnancy was beyond the woman's control (Ex:- health conditions of the mother, rape, incest) or when the fetus had no chance of survival; so called "hard reasons". However, results show that the majority were unwilling to accept legalizing abortion in situations when the pregnancy was within the woman's control; so called "soft reasons" (Suranga, et al., 2016). A similar conservative opinion was noted in another

study conducted in 2010. Over 70% of women who had undergone abortion did not think that legalizing abortion was appropriate or beneficial (Talagala, 2010).

Results of the current study highlighted that adult FFW (age above 25) tend to accept legalizing abortions for all the "hard reasons" compared to youth (age below 25) FFW. However, this association was insignificant statistically except for terminating a pregnancy with fetal abnormalities, when a fetus may survive with major abnormal conditions. Conversely, youth respondents tend to accept legal abortion for all the "soft reasons" compared to adults. However, these associations were not statistically significant except for terminating a pregnancy resulting from contraceptive failure and on the request of the woman. In consistency with the findings of the current study, a previous study found that the younger respondents (age <25 years) were more likely to accept legalizing abortion for contraceptive failure, poor economic conditions and on the woman's request or of the couple (Suranga, et al., 2016).

### 3.4.1. Factors associated with Attitudes towards Abortion

As explained in the methodology, we developed a composite score to measure the respondents' attitudes toward the Sri Lankan law on abortion. We decided to exclude the first section in the analysis as it is less correlated with other sentences and generated low internal reliability. After exclusion of the first statement, the finalized

scale had an acceptable level of internal validity (Cronbach Alpha = 0.716) (Tavakol & Dennick, 2011). Therefore the final tool contained only 9 sentences which ranged from 11 to 45. The lower values of the score represent conservative attitudes, whereas the higher values represent liberal attitudes towards abortion.

**Table 8:-** Socio-demographic and behavioral factors associated with the attitudes towards induced abortion

Variable	Level	Number of Respondents (n=585)	Median SCORE	Test for association		r(p)
				Mean Rank	Significant	
Age (Years)	Below 25	180	26	304	@0.284	-0.066 (0.109)
	25 and Above	404	26	288		
Years of formal education	Up to GCE O/L	378	26	288	@0.297	0.079 (0.056)
	Above O/L	206	26	303		
Working Experience in the KgEPZ	Less than 5 years	355	26	308	@0.008**	-0.147 (0.000)**
	5 Years and more	229	25	270		
Marital Status	Never Married	193	26	290	@0.507	
	Ever Married	389	26	300		
Number of Pregnancies	Zero	288	26	291	#0.944	-0.002 (0.961)
	1 to 2	216	26	296		
	3 to 6	80	26	292		
Number of Living Children	Zero	307	26	288	#0.608	0.009 (0.827)
	1 to 2	220	26	302		
	3 to 6	57	26	284		
Designation	Workers / Associates	478	26	287	@0.050*	
	Higher grade staff	106	27	322		
Ever used any kind of contraceptive method?	Yes	246	27	308	@0.043*	
	No	336	26	280		
Ever used emergency contraceptive pills	Yes	66	27	328	@0.070	
	No	518	26	288		
Has a history of unintended pregnancy	Yes	65	27	322	@0.138	
	No	517	26	289		
Has a history of induced abortion	Yes	22	25	274	@0.592	
	No	560	26	294		

**Note:** - Median SCORE = Median number correct answers provided by the respondents, @ = Probability value of Mann-Whitney U test, # = Probability value of Kruskal-Wallis test, r = Spearman Rank Correlation Coefficient, P = Probability, \* = statistically significant at 95% confidence level, \*\* = statistically significant at 99% confidence level

The Median score was 26. The variable did not follow a normal distribution. Almost one-tenth of the respondents (9.2%, n=54) had extremely conservative attitudes (Composite score is lower than 20) towards abortion whereas around one-fifth of the respondents

(19.7%, n=115) had comparatively liberal attitudes (Composite score is higher than 30). The rest of the respondents (71.1%, n=416) demonstrated moderate attitudes toward abortion. Table 08 presents the socio-demographic and behavioural factors

associated with the attitudes towards induced abortion.

Although the youth (age below 25) respondents tend to accept liberal laws on abortion more than adults (age 25 or above), that association was not significant at a 95% confidence level. However, the association was significant for years of work experience at the KgEPZ. Those with more years of work experience tend to have lower acceptance of liberal abortion laws.

Respondents with a higher level of formal education tend to have more liberal attitudes towards the abortion law. However, this association is not statistically significant. Respondents with higher grade designations agreed to accept legal abortion for a broader range of conditions compared to the lower designated staff (workers/machine operators/associates/helpers). There was no statistically significant difference in abortion attitudes between ever-married and never-married respondents. Similarly, the number of pregnancies and living children were not associated with attitudes towards the law governing abortion. However, the respondents with a history of using modern contraceptives or emergency contraceptives were more likely to accept liberal laws on abortion compared to those who hadn't used modern contraceptives and emergency contraceptives in their lifetime. History of experiencing unintended pregnancies and unsafe abortion were not associated with the respondents' attitudes towards the abortion law.

A previous study on factors associated with abortion attitudes in Sri Lanka published in

2015 shows that ethnicity, religion, age, years of formal education, marital status and number of living children were identified as the factors associated with attitudes towards induced abortion. Muslims are more conservative than all other ethno-religious groups for legalizing induced abortion. Respondents with a high level of education, fewer living children and lower age (youth) are more likely to accept liberalized laws on abortion. Similarly, never married respondents are more likely to accept legalizing abortion than married respondents. The study further highlighted that the individual's personal experience is positively associated with liberal attitudes towards abortion. Respondents who have ever used a contraceptive, respondents who have ever used emergency contraception, respondents who have ever faced a situation of contraceptive failure, respondents who have ever faced a situation of unplanned pregnancy, and respondents who have ever undergone a pregnancy termination tend to accept liberalization of the abortion law than the respondents who do not have these kinds of personal experiences (Suranga, et al., 2015). Further to the socio-demographic factors, past studies show that access to information is positively associated with liberal attitudes towards induced abortion. Access to information on abortion through newspapers, leaflets/handouts, television/ radio programmes and news, the internet and informal discussions show a positive association with liberal attitudes towards induced abortion. Access to mass media showed the strongest influence in determining abortion attitudes. Among the males, the common sources of information on abortion were television/radio, informal



discussion and school education. In contrast, females relied on the information received through informal discussions and public health staff (Suranga M, et al., 2017).

However, the current study couldn't detect most of these associations as the study population of the research is homogeneous compared to the general population. There

was a lack of representation of ethnic minorities due to the location of the KgEPZ. Therefore, the group is less diverse compared to the general population. Access to different sources of information has a considerable effect on the attitudes towards induced abortion. However, the current study was not focused on access to information as a determinant of attitudes towards abortion.

### **3.5. Use of Contraception including Emergency Contraception**

Although it is not the primary objective, this study collected information on the use of contraceptives by FFW. Nearly half of the respondents (42.4%, n=247) had ever used any modern contraceptive method, with the interval estimates from 38.2% to 46.5% ( $P < 0.05$ ). Only two unmarried respondents have ever used a modern contraceptive method. Of the 377 married respondents, 63.1% (n=238) had ever used any kind of modern contraceptive method.

According to the 2016 Demographic and Health Survey (DHS), it has been revealed that the awareness of family planning in Sri Lanka was 98%, the contraceptive prevalence was 70%, the prevalence of modern methods was 53% and the unmet need for family planning was 7% (DCS, 2017). However, these figures are not comparable with the current study's findings, as data on current use of contraception was not collected.

**Table 9:-** Number and percentage of currently married women who have ever used emergency contraceptives; Association with socio-demographic factors.

Variable	Level	Number of married women (n=379)	Numbers who have ever used ECP	Percentage	Ch <sup>2</sup> test for association X <sup>2</sup> (P)
Age (Years)	Below 25	68	2	3%	10.051 (0.002)**
	25 and Above	311	57	18%	
Level of Education	Up to GCE O/L	293	46	16%	0.017 (0.896)
	Above O/L	86	13	15%	
Working Experience in the KgEPZ	Less than 5 years	203	33	16%	0.158 (0.691)
	5 Years and more	176	26	15%	
Number of Pregnancies	Zero	94	7	7%	6.840(0.033)*
	1 to 2	208	40	19%	
	3 to 6	77	12	16%	
Number of Living Children	Zero	110	12	11%	2.623 (0.269)
	1 to 2	214	38	18%	
	3 to 6	55	9	16%	
Designation	Workers / Associates	332	52	16%	0.019 (0.892)
	Higher Grade staff	47	7	15%	

**Note:** - Association is statistically significant at a 95% confidence level, Association is statistically significant at a 99% confidence level

Around one-tenth of the FFW (11.3%, n=66) had used emergency contraceptives during their lifetime. Only one never married girl indicated that she had used emergency contraceptives. Out of the 379 married women, 15.6% (95% Confidence Interval = 12.1% to 19.6%) had ever used emergency contraceptives. As per the DHS-2016, only 0.3% of married women between the ages of 20 and 24 are currently using emergency contraception. There were no records on the use of emergency contraception among teenage (15-19) married women. The proportion of young married women (20-24) who are currently using emergency contraceptives (0.3%) is higher than the

proportion of adult married women (0.1) (DCS, 2017).

Compared to the married FFW, unmarried counterparts reported a much lower lifetime prevalence of emergency contraception. Only one never married girl indicated that she had used emergency contraceptives in her lifetime. However, according to the National Youth Health Survey 2012/2013, almost one-tenth (9%) of sexually active youth or their partners had used ECP during the preceding month (Suranga, 2019). In a study conducted among 395 undergraduate students of the Kothalawala Defense University in Sri Lanka, 25 respondents (6.5%) had used ECP during

their lifetime (Boteju, et al., 2017). An oral presentation in a public seminar on access to Sexual and Reproductive Health (SRH) information and counselling for youth via information communication tools available through the Happy Life Contact Centre of FPA Sri Lanka revealed that the majority of young people (31% of 1083) had contracted the centre via telephone in 2015 to receive information on emergency contraceptives. These facts suggest that the prevalence of emergency contraception reported in the current study is a lower estimate. This may be due to the provision of socially desirable

answers by the unmarried FFW due to contextual factors.

There were 11 FFW (all of them are married) in the sample (2.9%) who had used emergency contraceptives during the past 12 months. Five respondents indicated that they used emergency contraceptives twice during the past 12 months. Table 09 describes the number and percentage of currently married women who have ever used emergency contraceptives and their association with socio-demographic and behavioural factors.

### 3.6. Incidence of Unintended Pregnancies and Associated Factors

Results indicate that unintended pregnancy is not uncommon among the FFW in the KgEPZ. Around 40% of the respondents (n=229) were aware of a person working in the KgEPZ who had faced a situation of unintended pregnancy, out of which 66% (n=152) were due to contraceptive failures. Around one-tenth of the respondents (Point Estimate = 11.1%, n=65, 95% Confidence Interval = 8.7% to 14%) have ever faced a situation of unintended pregnancy during their lifetime. More than half (57%, n=37) were due to contraceptive failures. The mean age of FFW with a history of unintended pregnancies is 35 years (SD = 8.3 years), ranging from 20 to 49 years. On average, they had 6 years of working experience in the KgEPZ with 11 years of formal education. Out of the 65 respondents with a history of unintended pregnancies, only 17 (26.2%) have ever used emergency contraceptives and 22 (34%) had resorted to induced abortion.

Almost half of the respondents (49%) hadn't been ever pregnant during their lifetime. Therefore, a considerable portion of them may not be sexually active. There was only one never married girl who had faced an unintended pregnancy in the sample. Therefore, we performed further analysis for a sub-sample of 297 respondents who had ever been pregnant at the time of the study. Out of the 297 respondents who have ever become pregnant, around one-fifth (22%, n=65, Confidence Interval = 17.4% to 27.1%) have faced an unintended pregnancy during their lifetime. As per the results of a recent (2020) hospital based study conducted among 494 pregnant women using the London Measure of Unplanned Pregnancy (LMUP) tool, the estimated percentage of unintended pregnancies among Sri Lankan women is 17.2% (Ranatunga & Jayaratne, 2020). Therefore, the prevalence of unintended pregnancies among FFW (who have ever been pregnant) is significantly higher than the general female population (P=0.018). Table 10

presents the number and percentage of respondents who have at least one pregnancy and experienced an unintended pregnancy

during their lifetime and its' association with socio-demographic and behavioural factors.

**Table 10:-** Number and percentage of ever-pregnant respondents who have experienced an unintended pregnancy during their lifetime; Association with socio-demographic factors.

Variable	Levels	Number of respondents who have ever pregnant (n=296)	Numbers faced with an unintended pregnancy (n=65)	Percentage of ever pregnant	Ch <sup>2</sup> test for association X <sup>2</sup> (P)
Age (Years)	Below 25	19	9	47%	*P=0.018*
	25 and Above	277	56	20%	
Level of Education	Up to GCE O/L	230	50	22%	0.029 (0.864)
	Above O/L	66	15	23%	
Working Experience in the KgEPZ	Less than 5 years	146	30	21%	0.335 (0.563)
	5 Years and more	150	35	23%	
Number of Pregnancies	Zero	0	0	N/A	5.522 (0.019)*
	1 to 2	216	40	19%	
	3 to 6	80	25	31%	
Number of Living Children	Zero	19	7	37%	\$
	1 to 2	220	41	19%	
	3 to 6	57	17	30%	
Designation	Workers / Associates	265	59	22%	0.137 (0.711)
	Higher grade staff	31	6	19%	

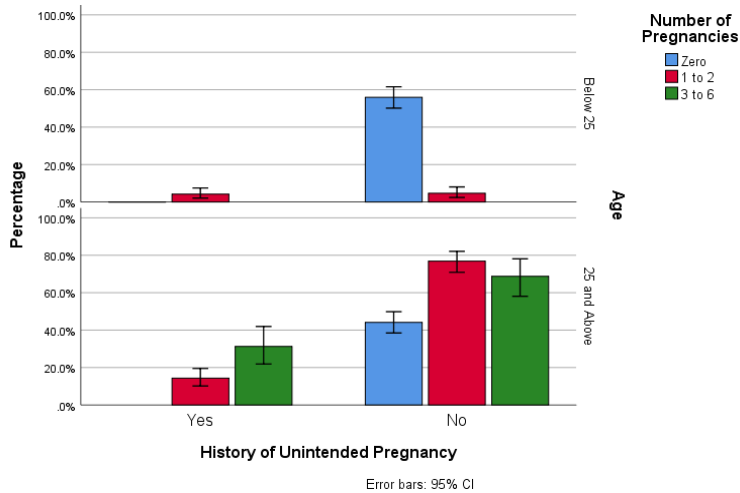
**Note:** - \* = statistically significant association at a 95% confidence level. # = the probability value of the fishers-exact test is presented. \$= Chi<sup>2</sup> test was not performed as 16.7% of the cells have an expected value of less than 05.

As expected, there was a positive association between experiencing an unintended pregnancy and the number of pregnancies (Mann-Whitney U statistic =6146, P=0.018) at a 95% confidence level. There was almost twice the risk of facing an unintended pregnancy among the factory workers who had three or more pregnancies (Odd Ratio=

0.593) compared to those who had one or two pregnancies (Odd Ratio= 1.185). A similar trend and association were observed between the number of living children and unintended pregnancies. Almost one-third of the pregnancies were considered unintended when the woman already had 3 or more children.

As most of the youth respondents (age below 25) may not be sexually active, unintended pregnancies among youth (5%, n=9) are significantly lower than the adults (14%, n=56)

ever become pregnant, unintended pregnancy is considered to be more than twice higher among the youth (47%, n=9) than the adults (20%, n=56). Therefore, one out of two pregnancies (47%) reported



**Figure 07:-** History of unintended pregnancy by age and number of pregnancies

for the total sample. However, when we consider the sub-sample of women who have

among youth FFW (age below 25) is considered unintended or unplanned.

Education shows a significant association with unintended pregnancies among the FFW ( $X^2=4.667$ ,  $P=0.029$ ). The prevalence of unintended pregnancies among the factory workers with a relatively lower level of formal education was higher (13%, n=50) compared to the respondents with formal education, GCE A/L or further (7%, n=15). Therefore, the unintended pregnancies among lower

designated staff (workers/associates) were significantly higher (12%, n=59) than the higher grade staff (6%, n=6). However, the number of years worked at the KgEPZ is not significantly associated with unintended pregnancies. It is important to note that we excluded the factory workers with less than one year of experience working in the KgEPZ.

### 3.6.1. Knowledge as a Determinant of Unintended Pregnancies

Out of the 296 respondents who became pregnant at least once, only 3 correctly answered all eight knowledge questions on overcoming unintended pregnancies. One in two respondents correctly answered at least five questions. We analyzed the pattern of

correctly answering knowledge questions by the respondents with a history of unintended pregnancies (n=65) compared to the women with a history of intended or wanted pregnancies (n=231). Respondents with a history of unintended pregnancies tend to

provide correct answers to more knowledge questions (Median = 5 questions) compared to the women with intended pregnancies (Median = 4 questions). However, this association is insignificant at a 95% confidence level (Mann-Whitney U statistic =

6495, P=0.091). Table 11 describes the number and percentages of ever pregnant women who correctly answered the knowledge question disaggregated by the status of pregnancy (intended or unintended).

**Table 11:-** Number and percentage of ever pregnant factory workers who provided correct answers to the knowledge questions; disaggregated by the status of the pregnancy (Intended / Unintended)

	Number and percentage of respondents who provided correct answers				Ch <sup>2</sup> test for association X <sup>2</sup> (P)
	Unintended (n=65)		Intended (n=231)		
	#	%	#	%	
1) A girl has a chance to become pregnant after a sexual act even before the first menstruation	22	34%	66	29%	0.676 (0.411)
2) A girl or women can become pregnant by following an intercrural sexual act	33	51%	107	46%	0.403 (0.526)
3) There are specific days in menstrual cycle where the chance to become pregnant is relatively high	53	82%	179	77%	0.491 (0.484)
4) Any modern contraceptive method is not 100% secure in preventing a pregnancy	57	88%	160	69%	8.804 (0.003)**
5) There are some drugs which can be taken even after an unsafe sexual encounter to avoid a pregnancy	53	82%	179	77%	0.491 (0.484)
6) Emergency contraceptives must be taken within 7 days after an unsafe sexual encounter in order to avoid an intended pregnancy	25	38%	81	35%	0.255 (0.614)
7) A valid prescription from a medical doctor is necessary to purchase Emergency Contraceptive Pills from the pharmacies in Sri Lanka	26	40%	95	41%	0.027 (0.870)
8) Frequent use of emergency contraceptives do not have adverse effects.	50	77%	183	79%	0.160 (0.689)

**Note:** - Intended = Women with a history of unintended pregnancies (n=65), Unintended = Women who a history of intended pregnancies (n=231), # = Number of respondents, %= Percentage of respondents, \*\* =Association is statistically significant at 99% confidence level

Results show that the respondents with unintended pregnancies tend to answer correctly to almost all knowledge questions compared to women with intended pregnancies. However, the association is statistically significant only for one knowledge question. A higher proportion of respondents with unintended pregnancies (88%, n=57) knew that any modern contraceptive method

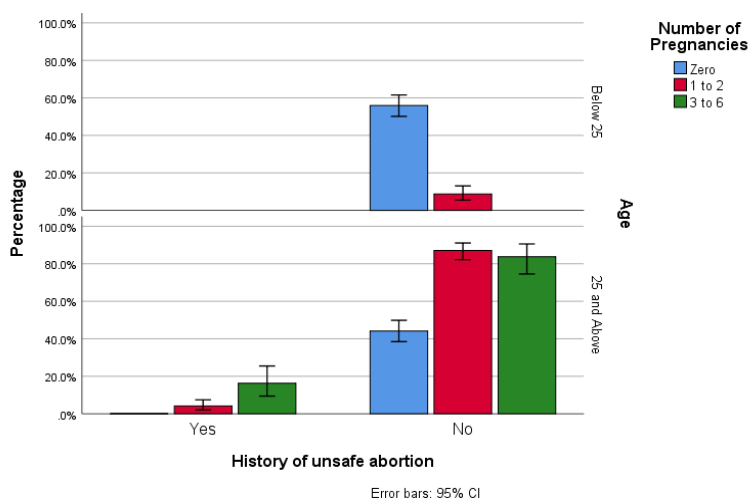
is not 100% reliable in preventing pregnancy compared to the women with intended pregnancies (69%, n=160). This may be because those women with a history of unintended pregnancy may have received exact information once they faced the situation of unintended pregnancies. Further investigations are needed to find the causality of this relationship.

### 3.7. Incidence of Unsafe Abortion and Associated Factors

Almost one-fifth of the respondents (19.5%, n=114) were aware of a woman working in the KgEPZ who had gone through an illegal abortion in their lifetime. Almost half of them (49%, n=56) expressed that those women who had undergone an illegal abortion had experienced complications after the procedure. Some respondents (3.2%, n=19) were aware of a person or a health service provider near the KgEPZ who would be ready to provide induced abortion services. Six respondents expressed that such service providers are located within less than 5 Kms, whereas the rest of the respondents (n=8) said that such service providers are located within 20 Kms.

The prevalence of induced abortion among FFW of reproductive age in the KgEPZ is estimated to be 3.8% ranging from 2.4% to 5.6% at the 95% confidence level. 22 respondents had undergone at least one induced abortion during their lifetime. This study did not investigate repeat abortions. Although the number is low (n=22), we tried

to descriptively analyze the profile of the respondents who had undergone induced abortion during their lifetime. All of them were above 25 years of age. There were no induced abortions reported among young girls and women below the age of 25. The mean age of women who have undergone induced abortion is 36 years. Only one never married respondent had undergone an induced abortion, whereas the rest were currently married (n=20) or divorced (n=1). The first pregnancy had been terminated by 3 respondents whereas others reported 2 (n=6), 3 (n=6), 4 (n=5) or 5 (n=3) pregnancies by the time of the interview (Figure 08). Previous research shows that most unmarried abortion seekers visit the abortion clinic for termination of their first pregnancy whereas among the married, only a small proportion terminate their first pregnancy (Suranga, 2019). In the current study, out of the 3 women who had terminated their first pregnancy, one was unmarried and another was divorced at the time of the interview.



**Figure 08:-** History of unsafe abortion by age and number of pregnancies

Five women with a history of induced abortion had no children, whereas others had 1 (n=7), 2 (n=8) or 3 (n=2) living children by the time of the interview. On average, they had 6 years of working experience in the KgEPZ with 12 years of formal education. Induced abortions were reported among machine operators (n=12), quality checkers (n=4), helpers (n=3), and higher grade staff (n=3). However, there is no statistically significant difference in the prevalence of induced abortion between lower grade staff (workers/associates) and higher grade staff.

Out of the 22 respondents who had a history of induced abortion, 18 women (81%) had used surgical procedures, whereas 4 respondents had undergone induced abortion using medical procedures / pills. This finding contradicts the common belief among some scholars who argue that there was a shift in abortion practices among Sri Lankan women from surgical abortion to medical abortion during the last decade (De Silva, 2019; Kaluarachchi, et al., 2018). It is

important to note that out of the 22 women with a history of induced abortion, only two women have ever used ECP and showed missed opportunities to prevent unsafe abortion. The prevalence of induced abortion was 4% among the factory workers who reported one or two pregnancies, whereas it is 14% among the FFW with three or more pregnancies. This association was statistically significant when we excluded the 288 respondents who had never been pregnant in their lifetime ( $X^2=12.483$ ,  $P=0.000$ ).

We performed further analysis on the abortion history of the subsample of 296 respondents who had been pregnant at least once by the time of the interview. Abortion prevalence among ever pregnant respondents was 7.4% (95% CI = 4.7%-11%). Table 12 describes the number and percentage of ever-pregnant respondents who have experienced an induced abortion during their lifetime and its' association with socio-demographic and behavioural factors.



**Table 12:-** Number and percentage of ever-pregnant respondents who have experienced an induced abortion during their lifetime; Association with socio-demographic factors.

Variable	Levels	Ever pregnant (n=296)	Ever aborted (n=22)	%	Ch <sup>2</sup> test for association X <sup>2</sup> (P)
Age (Years)	Below 25	19	0	0%	#0.378
	25 and Above	276	22	8%	
Level of Education	Up to GCE O/L	230	14	6%	#0.109
	Above O/L	65	8	12%	
Working Experience in the KgEPZ	Less than 5 years	146	9	6%	0.700 (0.403)
	5 Years and more	149	13	9%	
Number of Pregnancies	Zero	0	0	N/A	12.563 (0.000)**
	1 to 2	215	9	4%	
	3 to 6	79	13	16%	
Number of Living Children	Zero	19	5	26%	\$
	1 to 2	219	15	7%	
	3 to 6	57	2	4%	
Designation	Workers / Associates	264	19	7%	#0.714
	Higher Grade staff	31	3	10%	

**Note:** - Ever pregnant = Number of respondents who have ever been pregnant, Ever aborted = Number who have ever undergone an induced abortion, %= Percentage of respondents who have undergone an induced abortion out of ever pregnant respondents, \*\* = statistically significant association at a 99% confidence level. # = the probability value of the fisher's-exact test is presented. \$ = Chi<sup>2</sup> test was not performed as more than 12.5% of the cells have an expected value of less than 05.

In our sample, there were no abortion cases reported among the youth. There was one never married woman, but she was above 25 years of age. A National Survey conducted among 4,427 female adolescents found that 42 respondents (0.94 percent) had resorted to aborting their unwanted pregnancies (Talagala, et al., 2004). A relatively lower figure (0.1%) was reported in the most recent National Survey among youth in Sri Lanka (FHB, 2015). Two recent studies which analyzed the results of six past studies confirmed that the percentage of teenage abortion ranged from 2.0 – 8.6 percent

(Suranga, 2019; Suranga & De Silva, 2020). The findings of past studies clearly indicate that only 10 percent of abortion seekers in Sri Lanka are unmarried (Suranga & De Silva, 2020). There are two explanations for under reporting of abortions among unmarried youth respondents in the current study. First, we didn't specifically collect data on the exact age at the time of abortion, but the age at the time of the interview was analyzed. Secondly, the youth respondents may tend to provide socially desirable answers due to the context in which the interview was conducted.

## CONCLUSION AND RECOMMENDATIONS

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### 4.1. Conclusion

Knowledge of the FFW on overcoming unintended pregnancies is average to low, which makes them vulnerable to health and social risks. Knowledge of youth respondents (age below 25 years) was significantly lower than the adults. Respondents' knowledge of abortion and abortion law is considerably poor. Only one-tenth (11%, n=64) of the respondents were aware of the situations in which abortion is legal in the country. The attitudes of FFW towards abortion are conservative. However, a considerable proportion would like to legalize abortion if the pregnancy results from rape (50%), incest (46%) or if the fetus has lethal abnormalities (75%).

Nearly half of the respondents (42.4%, n=247) had ever used any kind of modern contraceptive during their lifetime, whereas only one-tenth (11.3%, n=66) had used emergency contraceptives during their lifetime. Out of the 297 respondents who have ever become pregnant in their lifetime,

around one-fifth (22%, n=65, Confidence Interval = 17.4% to 27.1%) had faced unintended pregnancies during their lifetime. Therefore, the prevalence of unintended pregnancies among FFW (who have ever been pregnant) is considered to be significantly higher than the general female population. Out of the 65 respondents with a history of unintended pregnancies, only 17 (26.2%) had ever used Emergency Contraceptives, and 22 (34%) had resorted to induced abortion.

The prevalence of induced abortion among FFW of reproductive age in the KgEPZ is estimated to be 3.8% (95% CI = 2.4% - 5.6%). The abortion prevalence among ever-pregnant respondents was estimated to be 7.4% (95% CI = 4.7%-11%). Out of the twenty two (22) respondents with a history of induced abortion, 18 women (81%) had used surgical procedures, whereas 04 (19%) had undergone induced abortion using medical procedures/pills.

## 4.2. Recommendations

- 1) Knowledge of FFW on overcoming unintended pregnancies and unsafe abortion is low, making them vulnerable to health and social risk of unintended pregnancies and unsafe abortion. As per the available literature, knowledge of induced abortion develops by accessing various formal and informal sources of information (Ex:- Mass media, community health system, peers/friends, etc.) as and when the girl/woman is exposed to reproductive health related incidences, (Ex:- Marriage, pregnancy, unintended pregnancy, abortion, etc.) with maturity rather than formal education in school or out of school (Suranga M, et al., 2017). FFW have relatively fewer opportunities than other women to access these sources of information, especially to meet community based service providers, which is the most effective source of information proven to have the highest effect on building abortion related knowledge. Therefore providing adequate opportunities for FFW to access this information in the factory setting is important. Factory management may conduct short sessions (2-3hrs per month) to build the knowledge of the FFW in general and youth, particularly on sexual and reproductive health.

Video clips, social media posts) using mobile apps, social media campaigns, etc. The use of innovative approaches, including mobile technologies, will reduce the opportunity cost of employing staff time on training programmes.
- 2) The use of information technology and mobile phones, especially among youth, has increased by many folds. Factory management may consider using these technologies to convey Sexual and Reproductive Health messages (Ex: -
- 3) Previous studies show that most receive information about abortion from their peers, which is the most common source of information on induced abortion among females (Suranga M, et al., 2017). Although most females seek abortion related information from their friends or peers, the reliability of that information is questionable. Results of previous studies also highlight that females rely on the information received from their friends or peers even after facing an unplanned pregnancy making them more vulnerable to illegal abortions (Talagala, 2010). Thus peer to peer communication seems to be a common mode of transfer of abortion related information, but the validity and reliability of information so received may be questionable. Factory management may consider training and developing a pool of FFW as peer educators/leaders to conduct well focused peer education interventions through behavioural change communication (BCC) approaches. Peer educators may provide Sexual and Reproductive Health messages as well and health commodities (Ex:- Contraceptive items, pregnancy test strips) to the workers as and when required.

- 4) Digital health interventions and service provision is becoming popular globally after the COVID-19 pandemic. Factory management may consider developing linkages with existing digital service provision channels (Ex: - Doc991, Happy Life, Know4Sure, Yowun Piyasa) to improve access to SRH services while working in the factory. Digital health interventions would be effective and efficient in terms of time and resources to operate in the context of EPZ.
- 5) Factory management may consider training the health staff (Ex:- Nurses) attached to the factories on Sexual and Reproductive Health service provision, including contraception and emergency contraception. Factories may equip their medical centres with necessary health commodities such as contraceptives, emergency contraceptives and pregnancy test strips to improve accessibility during working hours. Most of the factory workers who have undergone abortions are married. Providing marital and pre-marital counselling for those who need these services at the health centres would be important.
- 6) Respondents' knowledge of abortion and abortion law is considerably poor. Only one-tenth (11%, n=64) of the respondents were aware of the situations in which abortion is legal in the country. Around two-thirds (65%, n=379) of the respondents wrongly believe that the provision of treatment for a woman who has undergone an illegal abortion is an offence as per the present abortion law, which puts their lives at risk if they face complications resulting from an unsafe abortion. The situation concerning youth (girls below 25 years of age) is worse than adult respondents. Factory management may consider printing and distributing a leaflet or booklet on the causes and consequences of unintended pregnancies, unsafe abortion and abortion laws in the country.
- 7) Knowledge of FFW on contraceptives and emergency contraceptives is considerably low. It is important to note that out of the 22 women with a history of induced abortion, 5 hadn't ever used any modern contraceptive method, whereas 20 hadn't ever used ECP. Ten of them wrongly believed that a valid prescription was required to purchase emergency contraceptives from pharmacies, while 8 were not aware of the effective time to take emergency contraceptives. They hadn't received the correct knowledge even after an induced abortion, making them vulnerable to repeat abortions. All this indicates missed opportunities for preventing induced abortion among these factory workers. Improving access to this vital information and commodities can reduce the issue significantly.

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## Annexure 01:- Sample Size Calculation

### Formula for infinite populations (Cochran , 1977)

$$n_0 = \frac{Z_{\alpha-1}^2 * P * (1 - P)}{E^2}$$

Where,

$n_0$  = Minimum Sample Size assuming infinite population

$Z_{\alpha-1}$  = Z value corresponding to the desired confidence interval

P = Population proportion (Parameter) from historical data

$E^2$  = Desired margin of error

### Correction for finite populations (Cochran , 1977)

$$n = \frac{n_0}{1 + \{(n_0 - 1)/N\}}$$

Where,

N = Population size

n = Sample size adjusted with finite population correction

### Calculation for the current study

Confidence level	95%
$Z_{(\alpha-1)}$ for 95% confidence level	1.96
Population proportion (P)	0.5
Margin of Error (5%)	0.05
Sample size - infinite population ( $n_0$ )	384
Population size (N)	9412
Finite Population Correction Factor (FPC)	0.96
Sample size after adjusted for FPC (n)	368
Design Effect	1.5
Expected rate of non-respondents	10%
Expected number of non-respondents	55
<b>Final Sample Size (<math>n_f</math>)</b>	<b>608</b>
Sampling Fraction ( $n_f/N$ )	6.5%

## Annexure 02:- Interview Schedule

### Knowledge, attitudes and practices on unintended pregnancy and unsafe abortion among female factory workers in a selected export processing zone of Sri Lanka

IDENTIFICATION	
01	Name of the factory
02	Respondents Number within the factory

01. Social and Demographic variables	
1.1	Age (No of completed years)
	<div style="display: flex; justify-content: space-around; width: 100px;"> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> </div> <p><i>(Please discontinue the interview, if less than 18 years and more than 49 years)</i></p>
1.2	Years of working experience in Koggala Export Processing Zone
	<div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div> <p><i>(Please discontinue the interview, if less than 1 year)</i></p>
1.3	<b>Ethnicity</b> (Sinhalese =1, Muslims = 2, Indian Tamil = 3, Sri Lankan Tamil = 4, Burger = 5, other = 6)
	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div> <div style="text-align: right;"> <p>If "other" specify, .....</p> </div> </div>
1.4	<b>Religion</b> (Buddhist =1, Islam = 2, Hindu = 3, Roman Catholic =4 Christian = 5, other = 5)
	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div> <div style="text-align: right;"> <p>If "other" specify, .....</p> </div> </div>
1.5	Years of formal eEducation
	<div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div>
1.6	Designation <i>(please select the category and specify)</i>
	<div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div> <p>Specify: - .....</p>
1.7	Marital status (Married = 1, Never Married=2, Divorced=3, Widow =4, Other =5)
	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div> <div style="text-align: right;"> <p>If "other" specify, .....</p> </div> </div>
1.8	Number of pregnancies
	<div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div>
1.9	Number of living children
	<div style="text-align: center;"> <input style="width: 60px; height: 25px;" type="text"/> </div>

<b>02. Knowledge on pregnancy, preventing unintended pregnancies and unsafe abortion</b>				
I'll ask few questions to understand your level of knowledge on pregnancy, preventing unintended pregnancies and unsafe abortion. Please state whether these statements are correct or wrong. You can say "don't know", if you do not know the answer for any of these questions.				
	<b>Statement</b>	<b>Correct</b>	<b>Wrong</b>	<b>Don't know</b>
<b>02.1. Knowledge on pregnancy and overcoming intended pregnancies</b>				
2.1.1	A girl has a chance to become pregnant after a sexual act even before the first menstruation			
2.1.2	A girl or women can become pregnant by following an inter cural sexual act			
2.1.3	There are specific days in menstrual cycle where the chance to become pregnant is relatively high			
2.1.4	Any modern contraceptive method is not 100% secure in preventing a pregnancy			
2.1.5	There are some drugs which can be taken even after an unsafe sexual encounter to avoid a pregnancy			
2.1.6	Emergency contraceptives must be taken within 7 days after an unsafe sexual encounter in order to avoid an unintended pregnancy			
2.1.7	A valid prescription from a medical doctor is necessary to purchase Emergency Contraceptive Pills from the pharmacies in Sri Lanka			
2.1.8	Frequent use of emergency contraceptives do not have adverse effects.			
<b>02.2. Knowledge on abortions and its' consequences</b>				
2.2.1	The most common reason mentioned by the illegal abortion seekers in Sri Lanka is to terminate the first pregnancy after the marriage.			
2.2.2	Majority of Sri Lankan women who undergo illegal abortion are unmarried youth who were having premarital sex.			
2.2.3	Induced abortion is legal in Sri Lanka under some circumstances			
2.2.4	If Yes, In which of the following situations the induced abortion is legal in Sri Lanka? <i>(Please mark the correct answers. Multiple answers possible)</i>	To Protect physical or mental health of mother <input type="checkbox"/> To Save the life of the mother <input type="checkbox"/> Rape or incest <input type="checkbox"/> Congenital abnormalities of the fetus <input type="checkbox"/> Other (specify)..... <input type="checkbox"/>		
2.2.5	Provision of treatment for a women who has gone through an illegal abortion is an offence as per the present abortion law			
2.2.6	A pregnant women can get free safe abortion service from a government hospital, if the medical condition she has with the pregnancy is considered as a threat to her life			

### 03. Attitudes towards legal status of abortion in Sri Lanka

We would like to know your views, attitudes, and opinions on present abortion law of Sri Lanka and possible legislative changes. Please state to what extent do you agree or disagree to following statements. You can skip answering any of these sentences, if you would not like to response.

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't Say
	1	2	3	4	5	0

	Statement	Answer					
		1	2	3	4	5	0
3.1	Abortion must not be legalized under any circumstances.						
3.2	Government of Sri Lanka must legalize abortion to save the mothers' life.						
3.3	Government of Sri Lanka must legalize abortion to terminate pregnancy resulting a rape case						
3.4	Government of Sri Lanka must legalize abortion to terminate pregnancy resulting an incest						
3.5	Government of Sri Lanka must legalize abortion to terminate a pregnancy with fetal abnormalities – lethal conditions of the fetus						
3.6	Government of Sri Lanka must legalize abortion to terminate a pregnancy with fetal abnormalities – fetus may survive with major abnormal conditions						
3.7	Government of Sri Lanka must legalize abortion to terminate a pregnancy resulting from a contraceptive failure.						
3.8	Government of Sri Lanka must legalize abortion to terminate a pregnancy on account of bad economic conditions of the parents.						
3.9	Government of Sri Lanka must legalize abortion on the request of the couple (both husband and wife).						
3.10	Government of Sri Lanka must legalize abortion on the request of the women.						

\*\* Emergency contraceptive pills are not considered as abortion pills

05. Personal experiences of using contraceptives, unexpected pregnancies and induced abortion		
5.1.1	Have you ever used any kind of contraceptive method?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
5.1.2	Have you ever faced a situation of contraceptive failure?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
5.1.3	Have you ever faced a situation of unexpected pregnancy?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
5.1.5	Have you ever undergone an induced abortion (using pills** or surgeries)	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
5.1.6	If Yes, using pills or surgical procedure	01) By taking abortion pills 02) By undergoing a surgical procedure

04. Exposure to contraceptive failure, unexpected pregnancies and induced abortion		
4.1	Do you know any person <b>working in Koggala Export Processing Zone</b> who has ever faced to a situation of contraceptive failure?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
4.2	Do you know any person <b>working in Koggala Export Processing Zone</b> who has ever faced with an unintended pregnancy?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
4.3	Do you know any person <b>working in Koggala Export Processing Zone</b> who has ever had to go through an illegal abortion	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
4.4	Are you aware of a woman <b>working in Koggala Export Processing Zone</b> who had experienced complications after undergoing an illegal abortion?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
4.5	Are you aware of a person / health professional nearby <b>Koggala Export Processing Zone</b> who would be ready to provide an abortion service?	Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
	If Yes,	
4.6	How many Kilometers away from the <b>Koggala Export Processing Zone</b>	.....

06. Personal experiences of using emergency contraceptives	
6.1.1	Have you ever used emergency contraceptive pills? Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
6.1.2	If yes, have you used emergency contraceptive pills during past 12 months? Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
6.1.3	If yes, how many times you used emergency contraceptive pills during past 12 months? <input type="text"/>
6.1.4	If yes, have you used emergency contraceptive pills during past 03 months? Yes <input type="checkbox"/> No <input type="checkbox"/> Can't Say <input type="checkbox"/>
6.1.5	If yes, how many times you used emergency contraceptive pills during past 03 months? <input type="text"/>

Thank you very much for your time and effort to participate in this research. All of the answers you have given will be confidential and will be used only for study purposes. At this time, do you want to ask me anything about the survey?

Thank you

## Annexure 03:- Information Sheet

### INFORMATION FOR RESPONDENTS

#### **Knowledge, attitudes and practices on unintended pregnancy and unsafe abortion among female factory workers in a selected export processing zone of Sri Lanka**

Dear Respondent,

I am ..... attached to the FPA Sri Lanka. My current designation is field research officer / supervisor. I would like to invite you to take part in the research study titled Knowledge, attitudes and practices on unintended pregnancy and unsafe abortion among female factory workers in Koggala export processing zone of Sri Lanka conducted by FPA Sri Lanka.

**01) Purpose of the study:** - The overall objective of this study is to understand the level of knowledge, attitude and practices related to unintended pregnancy and unsafe abortion among female factory workers in koggala export processing zone of Sri Lanka. Study will also focus on the awareness, perception on unintended pregnancies, overcoming unintended pregnancies and unsafe abortion. Further, we study the factors which affect the knowledge, attitudes and practices.

**02) Voluntary participation:** - We would like to invite you to take part in this study as a respondent. Your participation in this study is voluntary and there will be no payment/honourarium for the participation. You are free to not participate at all or to withdraw from the study at any time despite consenting to take part earlier. There will be no loss of medical care or any other available treatment for your illness or condition to which you are otherwise entitled. If you decide not to participate or withdraw from the study you may do so at any time.

**03) Duration, procedures of the study and participant's responsibilities:** - This will be a face to face interview and it will take approximately 20 minutes. The interview will be conducted in a highly confidential environment (one to one) without involvement and hearing of outsiders. We can conduct the interview either at the FPA Sri Lanka Suwasewa Centre located in Bol premises or at your company based on your convenience. The medical centres attached to some factories are operated as associated clinics of FPA Sri Lanka. Those medical centres or any other place within the Bol premises can be used for the interview based on your choice.

You may choose not to answer any question if you wish to, despite having consented to participate in the study.



- 04) Potential benefits:** - The findings of this study will be utilized for planning and implementation of future policies and development programs in the export processing zones to overcome the issues related to unintended pregnancies and unsafe abortions.
- 05) Risks, hazards and discomforts:** - As this is a face to face discussion, you will not have major risk or hazards in participation. However, please feel free to inform me, if you feel inconvenience or discomfort.
- 06) Reimbursements:** - Your participation in this study is voluntary and there will be no payment/honourarium for the participation.
- 07) Confidentiality:** - Confidentiality of all records is guaranteed and no information by which you can be identified will be released or published. These data will never be used in such a way that you could be identified in any way in any public presentation or publication without your express permission.
- 08) Information on illegal abortion service providers:** - Although, this study collect some information related to illegal service providers operate in this area, we do not expect you to provide specific details (names, addresses, contact details, etc) about the illegal service providers. All those data will be recorded anonymously. However, if survey come up with the information about the illegal service providers, the aggregated data will be shared with the Medical Officer of Health of this area to take risk mitigation actions in terms of protection of women health."
- 09) Termination of study participation:** - You may withdraw your consent to participate in this study at any time during the interview despite consenting to take part earlier, with no loss of benefits. Please notify the Field Research Officer as soon as you decide to withdraw your consent and your responses will not be included in the study.
- 10) Ethical Approval:** - We received ethical approval to conduct this study from the "Ethical Review Committee of Sri Lanka Medical Association (SLMA-ERC)". You can contact SLMA-ERC for details and complaints.  
Address: - No.06, Wijerama Mawatha, Colombo 07, Sri Lanka.  
Telephone: - +94(11) 269 3324  
e-mail :- erc.slma@gmail.com
- 11) Clarification:** - If you have questions about any of the tests or procedures, or require additional information, please feel free to ask any of the persons listed below.
- ✓ Mr. M. Suchira Suranga – 0772600896
  - ✓ Mr. Duminda Rajakaruna – 0772888796
  - ✓ Mr. Janaranga Dewasurendra - 0719517518

Thank you,  
Yours faithfully,

A handwritten signature in blue ink, appearing to be 'M. Suchira', written over a dotted line.

M. Suchira Suranga (Principal Investigator),  
Director (Organizational Learning and Evaluation),  
The Family Planning Association of Sri Lanka,  
37/27, Bullers Lane, Colombo-7.

**Annexure 04:- Consent Form**

**CONSENT FORM FOR RESPONDENTS**

**Knowledge, attitudes and practices on unintended pregnancy and unsafe abortion among female factory workers in a selected Export Processing Zone of Sri Lanka**

**a. To be completed by the participant:**

The participant should complete the whole of this sheet himself/herself.

- 01 Have you read the information sheet? (Please keep a copy for yourself) (Yes/No)
- 02 Have you had an opportunity to discuss this study and ask any questions? (Yes/No)
- 03 Have you had satisfactory answers to all your questions? (Yes/No)
- 04 Have you received enough information about the study? (Yes/No)
- 05 Who explained the study to you? .....
- 06 Do you understand that you are free to withdraw from the study at any time, without having to give a reason and without affecting your future medical care? (Yes/No)
- 07 Have you had sufficient time to come to your decision? (Yes/No)
- 08 Do you agree to take part in this study? (Yes/No)

Participant's signature.....Date.....

Name (BLOCK CAPITALS).....

**b. To be completed by the investigator:**

I have explained the study to the above participant and he/she has indicated willingness to take part.

Signature of investigator.....Date.....

Name (BLOCK CAPITALS).....

**Annexure 05:- A sample show card which will be used in collecting data for section**

<b>03. Attitudes towards legal status of abortion in Sri Lanka</b>					
We would like to know your views, attitudes, and opinions on present abortion law of Sri Lanka and possible legislative changes. Please listen to me carefully and state to what extent do you agree or disagree to the statements which I am reading. You can skip answering to any of these statements, if you would not like to response.					
<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Can't Say</b>

Ethics Review Committee, Sri Lanka Medical Association



26 July 2021

Mr. M. S. S. Suranga,  
Director (Organizational Learning and Evaluation),  
FPA Sri Lanka

**ERC 21 – 013**

**Knowledge, attitudes and practices on unintended pregnancy and unsafe abortion among female factory workers in a selected export processing zone of Sri Lanka**

PI: Mr. M. S. S. Suranga, Director (Organizational Learning and Evaluation), FPA Sri Lanka  
Mr. R.M.D.K. Rajakaruna, Assistant Director (M&E), FPA  
Mr. J.W. Dewasurendra, Senior Manager (M&E), FPA

We are pleased to inform you that the SLMA ERC has granted ethical approval for the above proposal effective from 16 July 2021 as per details given below.

The approval was granted for

- a) Proposal version 4, dated 1 July 2021
- b) Information sheet in Sinhala version 4, dated 1 July 2021
- c) Information sheet in Tamil version 4, dated 1 July 2021
- d) Information sheet in English version 4, dated 1 July 2021
- e) Informed consent form in Sinhala version 4, dated 1 July 2021
- f) Informed consent form in Tamil version 4, dated 1 July 2021
- g) Informed consent form in English version 4, dated 1 July 2021
- h) Data collection instrument in Sinhala version 4, dated 1 July 2021
- i) Data collection instrument in Tamil version 4, dated 1 July 2021
- j) Data collection instrument in English version 4, dated 1 July 2021
- k) Show card in Sinhala version 4, dated 1 July 2021
- l) Show card in Tamil version 4, dated 1 July 2021
- m) Show card in English version 4, dated 1 July 2021

We affirm that none of the study team members were present during the decision-making process of the ERC.

This approval is valid for one year from the date of sanction.

As PI, you are responsible for the submission of the following documents using the appropriate forms of the SLMA ERC, which will be emailed to you.

1. 6 monthly progress reports on the study, if it extends beyond 6 months
2. A final report at the completion of the study

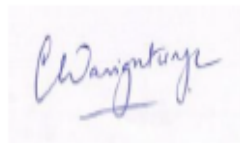
Please note that if an extension for the period of study is required the request should be submitted 3 months before the expiry of this approval and that it will depend on the progress report submitted and the reason for extension.

Please note that ethical approval will be revoked if any alteration is made to the research proposal without obtaining prior written consent from the ERC.

As the Principal Investigator, you are expected to ensure that procedures performed under the project will be conducted in accordance with all relevant national and international regulations and guidelines that govern research involving human participants.

You are also responsible for negotiating individual arrangements with the heads of service departments in those situations where the use of their resources is involved. Copies of the approval letters should be submitted to SLMA ERC once obtained.

Yours sincerely,



Professor Chandanie Wanigatunge  
Chairperson,  
Ethics Review Committee

Only Official letter will follow



**The Family Planning Association of Sri Lanka**

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