



An examination of contraceptive used before and during the covid-19 pandemic and factors influencing condom usage among Jamaicans

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ABSTRACT

COVID-19 became an issue in Jamaica when the nation recorded its first case on March 10, 2020. This study seeks to: (1) examines contraceptive usage among Jamaicans before and during COVID-19 and, (2) Identify where there has been an increase in contraceptive usage during the Covid-19 period because of the imposed social isolation and the mandatory physical downloads. Quantitative survey research was designed to collect data from Jamaicans via a correlational research design. Non-probability sampling was used to obtain the data from 500 sampled respondents across the island. A standardized survey was created in Google Forms to collect the data. The data were converted from Google Forms into Statistical Packages for the Social Sciences (SPSS) for Windows, Version 27.0, with 95% confidence interval. During the pre-COVID-19 period, 53.4% (n=267) of the sampled respondents indicated having utilized some form of contraception compared to 49.8% (249) utilized a contraceptive method. Furthermore, 33.8% of the sampled respondents indicated utilizing a condom during sex, 28.8% mentioned that they consistently use a contraceptive method during sexual intercourse and that 54.6% stated that they will continue to use a contraceptive method. The model for condom usage is a statistically significant one ($\chi^2=208.270$, $P<0.0001$), with the significant predictors accounting for 47.2% of the variance in condom usage among Jamaicans (Nagelkerke $R^2=0.472$, $-2LL=431.430$, Hosmer and Lemeshow Test $\chi^2=9.183$, $P=0.327$). The Ministry of Health and Wellness should implement measures to address the prospective rise in sexually transmitted infections and complications resulting from induced abortions.

INTRODUCTION

The outbreak of the coronavirus disease (COVID-19) in Jamaica started in early March 2020 which forced persons, businesses, and communities to go under lockdown. Patients are being quarantined and health workers are at the frontline putting them at risk of this new and oddly strange infection. Due to this occurrence, a major disruption in healthcare services during the peak of the current COVID-19 pandemic was expected, especially in family planning services (Filho NMF et al. 2020).

Family planning means to devise a plan that states when to have children and spacing the time they are born. This planning discussion importantly involves contraceptive use to prevent pregnancies until in the future (Nair M et al. 2015 and Kornides ML. 2015). Family planning services are "Basic Health Services" and the aim is not to limit the number of persons in

the family but to provide potential parents and parents with help when deciding to have children and after having children (Öztürk İnal Z et al. 2017). This is an important aspect of health care which can decide the future health, wealth, and productivity in a country. The term contraception is intentionally preventing pregnancies through the use of various contraceptives and contraceptives are used interchangeably as they are both designed to prevent conceptions (Jain R and Muralidhar S 2011). There are several categories of contraceptives which include: long-acting reversible contraception, barriers, hormonal contraception, fertility awareness, emergency contraception and permanent contraception; each of which must be consistently in use for effectiveness (Toorzani ZM et al. 2010 and Ehsanpour MM et al. 2010).

The social behaviour of a country will determine the use of contraceptives during the pandemic, the

basic contraceptives such as condom use has been an issue to use during sexual practices before the pandemic started (Ferguson 2020). Now, having a 'valid' reason not to use contraceptives such as COVID-19 which prevents access as well as causing shortages of some s of contraception, will affect the number of people who use contraceptive through sexual contact during the pandemic. A total of 500 sample data was acquired across the three counties of Jamaica (Cornwall, Middlesex, and Surrey), using online surveys. While a few persons are under the lockdown do/did they see contraceptives as necessary items to keep in stock at the home? Do/did they try to access any form of contraceptives to prevent unintended pregnancy? These questions asked will reflect the purpose of this research which is to examine whether there is an increase in the use of contraceptives in Jamaica since COVID-19, 2020?

Theoretical Framework

Social Cognitive Theory (SCT), by Albert Bandura, was developed in 1986 and posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behaviour (Bandura A 2004, Bandura A 1976, Bandura A 1977). (Lamorte WW 2019). This model/construct places emphasis on social influence and its importance on external and internal social reinforcement. SCT considers the unique way in which individuals acquire and maintain behaviour, while also considering the social environment in which individuals perform the behaviour. The theory considers a person's past experiences, with factor into whether behavioural action will occur. These past experiences influence reinforcements, expectations, and expectancies, all which shape whether a person will engage in specific behaviour and the reasons why a person engages in that behaviour (Lamorte WW 2019). This theory applies to the research question "Is there an increase in the use of contraceptives in Jamaica since COVID 19, 2020," as it speaks to the interaction of people, environment, and behaviour"? Contraceptives, also known as contraception, is designed to prevent pregnancy; as it relates to the COVID 19 pandemic and the mandatory adjustment made on a national level we saw it fitting to carry out our investigation on people's behaviour about the use of contraceptives during this period.

Figure 1 reciprocal triadic determinism: person (cognition), behaviour, and environment (Clark NM and Zimmerman BJ 2014)

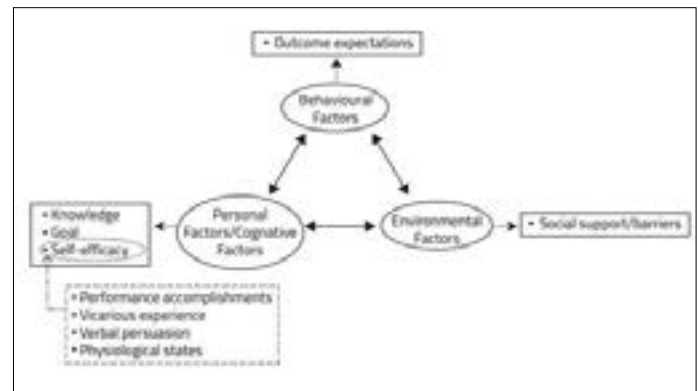


Figure 1: A reciprocal triadic determinism

Three main factors which are conducted as a reciprocal triadic determinism: person (cognition), behaviour, and environment. These can be influenced by four determinants: performance accomplishments (social modelling), vicarious experience (mastery experience), verbal persuasion, and physiological states. (Clark NM and Zimmerman BJ 2014).

Literature Review

The focus of this study is an examination of contraceptives used by Jamaicans during COVID-19, 2020: Is there an increase in the use of contraceptives in Jamaica since COVID-19. This study will not include the availability of contraception during COVID-19 nor is there any data accessible to compare contraceptive use between 2019 and 2020 to effectively answer the research question, is there an increase in the use of contraceptives in Jamaica since COVID-19. Although there is no existing research on this topic some reports contradict that there is an increase. According to Ferguson before the COVID-19 pandemic, there was an existing issue in accepting the use of condoms that is now coupled with the limited access to health care services, especially for persons who are quarantined to access family planning benefits of the health centres. (Ferguson, A 2020). Another source suggested that there has been an increase of contraceptive use within the Latin America and Caribbean regions inclusive of Jamaica but not specific to Jamaica.

In 2019 there was an increase in contraceptive uses (United Nations Department of Economic and Social Affairs). Family planning is an important aspect of the society with its socio-economic opportunities and benefits (Crawford TV et al. 2019) not having access to this health service can limit the use of contraceptives thus contributing to increasing of unintended pregnancies (Sharma JB et al. 2020). The access to family planning services has been disrupted due to the pandemic which limited the access to the regular planning they would use and stay home with the partner or significant other would increase sexual activities thus putting the risk for unwanted

pregnancies not only amongst adults but also amount adolescents (“Virus may spark ‘devastating’ global condom shortage”, 2020). The government of Jamaica is concerned about the expected increased pregnancies and ‘quarantine’-babies that would be born in February 2021 (Ferguson, A 2020), this highly suggesting that there was little to no contraceptive use during the starting of the pandemic.

At the starting of the COVID-19 pandemic, the major condom producers based in Malaysia were under lockdown and due to this, the world would see a shortage of condom production (“Virus may spark ‘devastating’ global condom shortage”, 2020). India which is one of the largest drug suppliers also went under lockdown which disrupted the chain of production for other contraceptives such as progesterone hormone-producing pills which ultimately affected the production and distribution of modern contraceptives (Aly J et al. 2020).

On the contrary, contraceptive use and access in the Latin America and the Caribbean showed an increase in this area in 20 years from 2000 to 2020 with figures of 63,469,000 to 95,570,000 respectively (World Family Planning 2020) Contraceptive use is determined by the influence of the society on the population and the access they have to health services and contraceptives on a whole especially during the COVID-19 pandemic. Data collected would answer the research question to bring light to the fact that there may be an increase in contraceptive use during COVID-19 in Jamaica.

METHODS AND MATERIALS

Quantitative research was used to achieve the aim of the research question “Is there an increase in the use of contraceptives in Jamaica since COVID-19?” According to the Difference between qualitative and quantitative research blog, quantitative research is used to quantify the problem by way of generating numerical data or data that can be transformed into usable statistics. It is used to quantify attitudes, opinions, behaviours, and other defined variables – and generalize results from a larger sample population (DeFranzo SE 2020). The structure of the study entails a cross-sectional study with a descriptive research design. The population was selected utilizing non-probability sampling (convenience sampling).

The collection of data was from November 12 to December 10, 2020. The research involved the collection of data from 500 participants, both male and female, from the three counties in Jamaica: Cornwall, Middlesex, and Surrey. Cornwall County constitutes Hanover, St. Elizabeth, St James, Trelawny, and Westmoreland; Middlesex County comprises Clarendon, Manchester, St Ann, St.

Catherine, and St Mary, and Surrey County consists of Kingston, Portland, St Andrew, and St. Thomas.

Individuals were instructed on the nature and purpose of the study. Additionally, individuals were not required to give details that would jeopardize confidentiality and anonymity. Survey questionnaires were created by Google Forms, all consisting of 10 closed-ended questions, and these were guided by Rea and Parker (Rea LM and Parker RA 2014). The message containing the link for survey questionnaires was sent out with details of the study on social media platforms, for completion by individuals 18 years old and older.

Retrieved respondent’s data displayed on charts and horizontal bar graphs, was analyzed by the utilization of Google form, Microsoft office excels spreadsheet, and IBM Statistical Packages for the Social Sciences (SPSS) for Windows 2. 7. Data were analyzed by way of frequencies and per cent, bivariate analysis (chi-square), and logistic regression (Rea LM and Parker RA 2014, Polit DF 1996, Mamingi N 2005, Lewis-Beck M 1980). Logistic regression was used to determine factors influencing condom usage among Jamaicans. A p-value of 5% was used to determine statistical significance.

RESULTS

The demographic characteristics of the sampled respondents are presented in Table 1. Of the sampled respondents (n=500), most of them were females (76.8%), less than 24 years old (52.0%), and dwelled in Middlesex (64.8%).

Table 1: Demographic Characteristics of the Sampled Respondents, n=500

Details	% (N)
Gender	
Male	23.2 (116)
µmFemale	384 (76.8)
Age Cohort	
µm18-24 years old	52.0 (260)
µm25-34 years old	31.8 (159)
µm35-44 years old	12.2 (61)
µm45-54 years old	3.4 (17)
µm55-59 years old	0.6 (3)
Area of Residence	
µmMiddlesex	64.8 (324)
µmSurrey	16.8 (84)
µmCornwall	18.4 (18.4)

Majority of the sampled respondents indicated that they believe in the use of contraceptives (83.4%). However, only 53.4% indicated that they utilized a

contraceptive before COVID-19 (March 10, 2020) compared to 49.8% who are currently using a contraceptive (Table 2). Furthermore, only 33.8% of the sampled respondents mentioned that they use a condom and 54.6% stated that they will continue utilizing contraceptives. The findings also revealed that 35.9% of the sampled respondents indicated that they have never used a contraceptive in their life compared to only 28.8% who frequently did so and that 35.4% used multiple contraceptive methods (Table 2).

Table 2: Contraceptives Utilization, and Frequency of Contraceptive Usage, n=500

Details	% (N)
Believe in Using Contraceptive	
No	16.6 (83)
Yes	83.4 (417)
Using contraceptive (Before COVID-19)	
No	46.6 (233)
Yes	53.4 (267)
Using contraceptive (During COVID-19)	
No	50.2 (251)
Yes	49.8 (249)
Contraceptives	
Condom	33.8 (169)
Pills	18.8 (94)
Emergency contraceptive pills	11.8 (59)
Injection	5.6 (28)
IUD	2.2 (11)

Other	9.8 (49)
Frequency of Contraceptive Usage	
None at all	35.8 (179)
Sometimes	35.4 (177)
Always	28.8 (144)
Plan on continuing using contraceptive	
No	11.0 (55)
Yes	54.6 (273)
Multiple Contraceptive Usage	
No	64.6 (323)
Yes	35.4 (145)

Table 3 presents issues on contraceptives utilization disaggregated by the gender of the respondents. The findings revealed that more of the sampled males indicated that they currently utilized contraceptives (58.6%) compared to the sampled females (47.1%). Furthermore, one in every 2 of the sampled females indicated that they will be continued to utilize a contraceptive compared to almost 7 in every 10 of the sampled males (Table 3).

Table 3: Contraceptives Utilization, and Frequency of Contraceptive Usage, n=500

Table 4 presents issues on contraceptives disaggregated by age cohort of the sampled respondents.

Table 5 presents a cross-tabulation between contraceptives utilization, frequency of contraceptive, plan on continuing using contraceptive and condom usage. The findings indicated that there is irregular contraceptive usage among Jamaicans.

Table 3: Contraceptives Utilization, and Frequency of Contraceptive Usage by Gender, n=500

Details	Gender		Total % (N)	χ ² ; P-value
	Male	Female		
	% (N)	% (N)		
Believe in Using Contraceptive				2.240; 0.134
No	12.1 (14)	18.0 (69)	16.6 (83)	
Yes	87.9 (102)	82.0 (315)	83.4 (417)	
Using contraceptive (before Covid-19)				10.225; 0.001
No	33.6 (39)	50.5 (194)	46.6 (233)	
Yes	66.4 (77)	49.5 (190)	53.4 (267)	
Using contraceptive (During Covid-19)				4.701; 0.030
No	41.1 (48)	52.9 (203)	50.2 (251)	
Yes	58.6 (68)	47.1 (181)	49.8 (249)	
Contraceptive s				

Condom	61.2 (71)	25.5 (98)	33.8 (169)	50.704; <0.0001
Pills	N/A	N/A	18.8 (94)	
Emergency contraceptive pills	N/A	N/A	11.8 (59)	
Injection	N/A	N/A	5.6 (28)	
IUD	N/A	N/A	2.2 (11)	
Other	N/A	N/A	9.8 (49)	
Frequency of Contraceptive Usage				14.055; 0.001
None at all	21.6 (25)	40.1 (154)	35.8 (179)	
Sometimes	40.5 (47)	33.9 (130)	35.4 (177)	
Always	37.9 (44)	26.0 (100)	28.8 (144)	
Plan on continuing using contraceptive				
No	3.4 (4)	13.3 (51)	11.0 (55)	16.832; <0.0001
Yes	69.8 (81)	50.0 (192)	54.6 (273)	
Not Applicable	26.7 (31)	36.7 (141)		
Multiple contraceptive methods				4.033; 0.045
No	72.4 (84)	62.2 (239)	64.6 (323)	
Yes	27.6 (32)	37.8 (145)	35.4 (145)	

Table 3: Contraceptives Utilization, Contraceptives, and Frequency of Contraceptive Usage by Age Cohort

Details	Age Cohort					Total % (N)	χ^2 ; P-Value
	18 – 24 yrs	25 – 34 yrs	35 – 44 yrs	45 – 54 yrs	55 – 59 yrs		
Believe in Using Contraceptive							0.797; 0.939
No	16.9 (44)	17.0 (27)	14.8 (9)	17.6 (3)	0.0 (0)	16.6 (83)	
Yes	83.1 (216)	83.0 (132)	85.2 (52)	82.4 (14)	100.0 (3)	83.4 (417)	
Using contraceptive (before Covid-19)							6.901; 0.141
No	49.2 (128)	40.3 (64)	49.2 (30)	47.1 (8)	100.0 (0)	46.6 (233)	
Yes	50.8 (132)	59.7 (95)	50.8 (9)	52.9 (9)	0.0 (0)	53.4 (267)	
Using contraceptive (During Covid-19)							4.998; 0.287
No	51.9 (135)	45.3 (72)	52.5 (32)	52.9 (9)	100.0 (0)	50.2 (251)	
Yes	48.1 (125)	54.7 (87)	47.5 (29)	47.1 (8)	0.0 (0)	49.8 (249)	

Contraceptive s							
Condom	37.3 (97)	33.3 (53)	21.3 (13)	35.3 (6)	0.0 (0)	33.8 (169)	7.246; 0.123
Oral Contraceptive pill	19.6 (51)	22.6 (36)	9.8 (6)	5.9 (1)	0.0 (0)	18.8 (94)	7.414; 0.116
Emergency contraceptive pills	13.5 (35)	11.3 (18)	6.6 (4)	11.8 (2)	0.0 (0)	11.8 (59)	2.737; 0.603
Injection	3.5 (9)	7.5 (12)	11.5 (7)	0.0 (0)	0.0 (0)	5.6 (28)	8.559; 0.073
IUD	0.4 (1)	5.0 (8)	3.3 (2)	0.0 (0)	0.0 (0)	2.2 (11)	10.687; 0.030
Other	5.4 (14)	13.2 (21)	19.7 (12)	11.8 (2)	0.0 (0)	9.8 (49)	14.846; 0.005
Frequency of Contraceptive Usage							
None at all	34.2 (89)	35.2 (56)	37.7 (23)	47.1 (8)	100.0 (3)	35.8 (179)	10.620; 0.224
Sometimes	39.6 (103)	32.1 (51)	31.1 (19)	23.5 (4)	0.0 (0)	35.4 (177)	
Always	26.2 (68)	32.7 (52)	31.1 (19)	29.4 (5)	0.0 (0)	28.8 (144)	
Plan on continuing using contraceptive							15.478; 0.050
No	14.2 (37)	6.3 (10)	11.5 (7)	5.9 (1)	0.0 (0)	11.0 (55)	
Yes	50.8 (132)	61.0 (97)	59.0 (36)	47.1 (8)	0.0 (0)	54.6 (273)	
Not applicable	35.0 (91)	32.7 (52)	29.5 (18)	47.1 (8)	100.0 (3)		

Table 5: Contraceptives Utilization, Frequency of Contraceptive, and Plan on Continuing using Contraceptive by Condom Usage, n=500

Details	Condom Usage		Total	χ ² ; P-value
	No	Yes		
	% (N)	% (N)	% (N)	
Contraceptive methods:				
Oral Contraceptive pills				3.964; 0.004
No	83.7 (277)	76.3 (129)	81.2 (406)	
Yes	16.3 (54)	23.7 (40)	18.8 (94)	
Emergency contraceptive pills				10.502; 0.001
No	91.5 (303)	81.7 (138)	88.2 (441)	
Yes	8.5 (28)	18.3 (31)	11.8 (59)	
Injection				9.420; 0.002
No	92.1 (305)	98.8 (167)	94.4 (472)	
Yes	7.9 (26)	1.2 (2)	5.6 (28)	
IUD				3.069; 0.080
No	97.0 (321)	99.4 (168)	97.8 (489)	
Yes	3.0 (10)	0.6 (1)	2.2 (11)	
Other				13.394; <0.0001

No	86.7 (287)	97.0 (163)	90.2 (450)	
Yes	13.3 (44)	3.0 (5)	9.8 (49)	
Frequency of Contraceptive Usage				118.184; <0.0001
None at all	52.3 (173)	3.6 (6)	35.8 (179)	
Sometimes	28.4 (94)	49.1 (83)	35.4 (177)	
Always	19.3 (64)	47.3 (80)	28.3 (144)	
Plan on continuing using contraceptive				104.714; <0.0001
No	14.2 (47)	4.7 (8)	11.0 (55)	
Yes	38.4 (127)	86.4 (146)	54.6 (273)	
Not Applicable	47.4 (157)	8.9 (15)	34.4 (172)	

Factors Influencing Condom Usage among Jamaicans

This aspect of the study seeks to examine whether condom usage is influenced by the area of residence, gender, age, frequency of contraceptive usage, and contraceptive methods. The purpose is to see whether they are associated with condom usage among Jamaicans. Before the establishment of the model, a review was done on the adequacy of the model. To examine the goodness of fit of the model, the classification table was to compare the predicted to the observed observations. The classification table presents that 78.6% of the overall data were correctly classified 66.3% of those who were classified as using a condom and 84.9% of those who did otherwise (Table 6). The model for condom usage is

a statistically significant one ($\chi^2=208.270$, $P<0.0001$), with the significant predictors accounting for 47.2% of the variance in condom usage among Jamaica (Nagelkerke $R^2=0.472$, $-2LL=431.430$, Hosmer and Lemeshow Test $-\chi^2=9.183$, $P=0.327$).

Table 7 presents the variables that can explain condom usage among Jamaicans. Of the eight variables, 4 predict condom usage among Jamaica. These are gender, injection, frequency of contraceptive usage during coitus, and age of respondents. Furthermore, females were 0.715 times less likely than males to use a condom during sexual activities, those who use the injection were 0.885 times less likely to use a condom, respondents 55-59 years old were less likely to use a condom compared to young people (18-24 years old).

Observed			Predicted		
			Condom		Percentage Correct
			No	Yes	
Step 1	Condom	No	281	50	84.9
		Yes	57	112	66.3
	Overall Percentage				78.6

a. The cut value is .500

Table 6: Classification Table

Logistic regression- estimates for Condom Usage among Jamaicans									
Variable		B	S.E.	Wald	df	Sig.	Odds ratio	95% CI	
								Lower	Upper
	Middlesex	-0.243	0.326	0.555	1	0.456	0.784	0.414	1.486
	Cornwall	0.27	0.389	0.48	1	0.488	1.309	0.611	2.807
	The reference group (surrey)	1							
	Dummy gender (1=female)	-1.255	0.28	20.109	1	<0.0001	0.285	0.165	0.493

Oral Contraceptive Pills	-0.308	0.281	1.196	1	0.274	0.735	0.424	1.276
Emergency contraceptive pills	0.141	0.332	0.18	1	0.671	1.151	0.601	2.205
Injection	-2.165	0.787	7.565	1	0.006	0.115	0.025	0.537
Intra-uterine device	-2.021	1.097	3.393	1	0.065	0.132	0.015	1.138
Always use contraceptives	3.885	0.476	66.723	1	<0.0001	48.674	19.162	123.64
Sometimes use contraceptives	3.298	0.463	50.682	1	<0.0001	27.052	10.912	67.067
The reference group (None at all)	1							
25 - 34 years old	-0.082	0.271	0.091	1	0.763	0.922	0.542	1.566
35 - 44 years old	-0.859	0.42	4.194	1	0.041	0.423	0.186	0.964
45 - 54 years old	-0.209	0.728	0.082	1	0.774	0.812	0.195	3.379
55 - 59 years old	-17.627	23183.001	0	1	0.999	0	0	.
The reference group (18 - 24 years old)	1							
Constant	-2.164	0.539	16.14	1	<0.0001	0.115		

DISCUSSION

The matter of contraceptive usage is critical to health, life, and human development. The issue extends beyond public health to general well-being, welfare, healthy life expectancy, production, and productivity. Contraceptive usage is key to explaining reproductive health, the transmission of sexually transmitted infections, mortality, morbidity, and offers an insight into human choices and these can affect the welfare of others. Hence, contraceptive usage offers some insight into the human development of a society. COVID-19 has changes peoples' behaviour because of the elements of social isolation, social distancing, and more time spend at home with family members and love ones. Although social isolation, social distancing, facial mask-wearing, hand sanitation, and other protocols promulgated by the (Center for Disease Control and Prevention), (World Health Organization), and the Jamaican (Ministry of Health and Wellness), no advice has articulated on sexual relations between this COVID-19 pandemic. Hence, the critical matter of importance for public health is 'How will the Covid-19 pandemic influence reproduction health, morbidity, mortality patterns, and life expectancy?' This research forwards that the COVID-19 pandemic will create some public health challenges for the world and as such initiatives must be implemented now before the matter becomes another pandemic (mortality or morbidity).

A study was conducted by (Aly, Haeger, and Christy, 2020) on the contraceptive access during COVID-19,

and that this may have some influence on usage. However, this study is not examining access, it is evaluating usage and factors influencing condom usage among Jamaicans. For this research, some context must be created to understanding the pending public health challenge of the COVID-19 pandemic. Dating back to 1970, the United Nations (United Nations, 2015) found that 52 per cent of women indicated that their needs were effectively met by contraceptive methods and that this had increased to 83% in 2015. Furthermore (United Nations, 2015) postulated that Jamaicans' usage of contraceptive methods is approaching that of the United States (69% among married women, and an 85% satisfaction of the contraceptive method meeting their needs).

Studies by Wilks, Younger, Tulloch-Reid, McFarlane, and Francis (Wilks R et al 2008, Wilks R 2016-2017) provide more detailed findings on the sexual behaviour of Jamaicans than previous forwarded statistics from the United Nations. In 2007-2008, (Wilks et al. 2008) conducted a national probability study of 2,848 Jamaicans aged 15-74 years old on different health matters including reproductive health matters. The findings revealed that (1) 53% of respondents used a condom when engaged in sexual relations (males, 62%; females, 41%), (2) 72.7% had sexual relations in the last 6 months, (3) 25% never used contraceptive methods (males, 26.0%; females, 25.0%), and (4) 34.4% have never had coitus in the last 12 months (males, 15.6%; females, 32.9%). In 2016-2017, (Wilks et al. 2018) reported that 21.6% of the Jamaicans aged 15+ years did not use a

contraceptive method, and 33.35 used a condom on their last sexual activity.

For the current study, 33.8% of Jamaicans aged 18+ years old used a condom on their last sexual activity compared to 33.3% for (Wilks et al. 2018) with substantially fewer females having used a condom on their last sexual activity in the current study compared to findings of Wilks et al.'s work in 2018. Both studies by (Wilks et al.2018) were conducted before the COVID-19 pandemic and the last one in 2016-2017. This denotes that between 3 to 4 years after the last study by Wilks et al., almost the same prevalence of condom usage existed among Jamaicans. Furthermore, more Jamaicans did not use a contraceptive method before the COVID-19 as revealed by the current study compared to that of Wilks and his colleagues' work. However, more Jamaicans have opted not to use a contraceptive method during the COVID-19 pandemic compared to before the pandemic, and that decline was more among males than females (males, -7.8%; females, -2.4%).

Anecdotally, it is expected that there will be an increase in birth rate, sexually transmitted infections, induced abortions, and demand on the healthcare system within the next year because of the current COVID-19 policy (Ferguson, A 2020 and Caruana-Finkel L 2020), which can be deduced and supported from the current work. The evidence is in that only 28.6% of Jamaicans aged 18+ years indicated that they consistently used a contraceptive method on sexual activity, which would support a claim for the increase in fertility, induced adoptions, sexually transmitted infections, and teenage pregnancies come 2021 and beyond. Those are public challenges that await Jamaicans after the Covid-19 pandemic and more so from the findings that only 55% of Jamaicans aged 18+ years indicated that they would continue to use a contraceptive method in the future. A notable finding of this research is that none of the people aged 55-59 years indicated using a contraceptive method either before or during the Covid-19 pandemic. Such findings provide some insight into the risky sexual choices of Jamaicans and open some explanation for people spending more time at home because of a pandemic and the fact that a belief in the value of contraceptives does not necessarily influence sexual behaviour.

On critically examining the COVID-19 protocols promulgated by the Jamaican Ministry of Health and Wellness, the Center for Disease Control and Prevention (CDC) and the World Health Organizations (WHO), it showed that nothing was forwarded on sexual behaviour during the pandemic. A problematic matter is the issue of contraceptive access because

of a shortage (Jamaica Observer Limited, 2020) and this may furthermore complicate the public health challenges of the Covid-19 pandemic. There is a need for public health practitioners as well as those agencies previously mentioned to immediately implement a social media campaign on responsible sexual practices during the COVID-19 pandemic as failure to provide some context for peoples' behaviour is likely to result in another pandemic. Using Social Cognitive Theory (SCT), a model can be created to influence the social behaviour of Jamaicans as many of the sexual engagements of people are socially determined.

The matter of condom usage is critical to reproductive health and plays a pivotal role in the general well-being of the society, which explains its importance in human development. The reluctance of many Jamaicans to use a condom and the high inconsistency in contraceptive usage are indications of the gap between knowledge and practice. Furthermore, Social Cognitive Theory offers some context for what continues in Jamaica. The social milieu is critical to peoples' behaviour and Jamaicans have come a far way in term of contraceptive usage since the 1970's. In 1970, Jamaica's fertility rate was 5.5 children per woman at child bear age and in 2018 this stands at 1.979 which is less than the replacement level fertility (World Bank). Instead of using a condom, many women in Jamaica utilize oral emergency contraceptive pills, oral contraceptives, injections, as well as Intra-uterine device. The factors determining condom usage among Jamaicans (gender, age, frequency of contraceptives usage, and selected contraceptive method) offers a comprehensive framework on the sexual habits and practices.

The current study found that females were 0.715 times less likely to use a condom than males, which contradicts the work of (Nnedu, McCorvey, Campbell-Forrester, et al. 2008). The public health concern of this practice cannot go on notice, and a study is needed to examine why this is the case among Jamaican women. The sexual behaviour of Jamaica is being questioned as those who utilize injection was 0.885 times less like to use a condom compared to those who do not use this contraceptive method. Another issue that highlights the need to empirically investigate the behaviour of Jamaican women is the use of other contraceptive methods and reluctance to utilize a condom and this matter cannot go unnoticed because of the glaring public health challenge (re-emergence of sexually transmitted infections) that is associated with this behaviour.

The study conducted by (Nnedu, et al. 2008) found that age was not a factor of condom usage, which goes contrary to this research. However, this study found

that in ages less than 55 years, there was no statistical difference in condom usage and this study changes at 55+ years. Jamaican ages 55-59 years old were 0.001 times less likely to use a condom compared to those aged 18-24 years old, and this somewhat concurs with research is done in Brazil (Gutierrez, et. al. 2019) posited that inverse relationship between age and condom usage suggests that an increase in age is associated with less usage of a condom. The matter of an inverse statistical correlation between age and condom usage among Jamaicans as well as young Brazilians highlights an embedded culture practice that warrants empirical inquiry as this may offer an insight into the transmission of sexual infections, teenage pregnancies, induced abortion among young women, and rise in fatherless children in those societies because of the COVID-19 pandemic.

Like the work of (Nnedu, et al. 2008) this study found a positive statistical relationship between frequency contraceptive usage and condom usage in sexual relations. This study found that those who consistently use a method of contraceptive were 48.7 times more likely to use a condom, which was 3.5 times in the work of Nnedu, et al. In fact, the present work goes further than that of Nnedu, et al.'s study and revealed that those who inconsistently use a contraceptive method were 27.1 times more likely to utilize a condom. Some cultural issues continue to influence contraceptive usage among Jamaicans despite the various social intervention programmes targeted at behaviour changes.

A matter of importance to public health is the multi contraceptive usage among Jamaicans, particularly those who use both a condom and other methods. For this study, respondents who utilize oral contraceptive, as well as the emergency contraceptive pills, were substantially more likely to use a condom during sexual activities than those who use injection, other methods, and Intra-uterine device. The study of (Frohirth, Blades, Moore, and Wurtz 2016) found that 9% of American use utilizes multiple contraceptive methods, which is higher in this study (37.8%). As the study of (Frohirth, Blades, Moore, and Wurtz 2016), women those use oral contraceptives were most likely to simultaneously use a condom. The Jamaican government should prepare for the re-emergence of sexually transmitted infections including human immunodeficiency viruses (HIV) as well as increases in pregnancies, abortion care, and the demand for healthcare services to meet the public health crisis that will be caused by COVID-19 more so because of the 'The virus (COVID-19) may spark 'devastating' global condom shortage'.

CONCLUSION

There is a lingering public health crisis as it relates to the re-emergence of sexually transmitted infections, pregnancies, abortion, and demand on the healthcare system that will unfold in 2021 and beyond, which will be fostered by the COVID-19 pandemic. This suggests that much forward planning needs to be done in anticipation of this projected imminent societal dilemma.

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