Social predictors of burnout and strategies employed in the health care setting.

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Abstract

Background Information: Health care workers (HCWs) are prone to burn out, which can have an adverse effect on their person and the patients to whom care is offered. This is dependent on socio-demographic features of workers, as they are part of social groups. Also, strategies employed vary across individuals and health institutions and needs to be assessed to aid future decisions. Aim: This study assessed burnout among health care workers, socio-demographic factors, as well as strategies employed. Methods: Data was collected from 320 HCWs in a tertiary health care institution using self-administered questionnaires from June through August 2022 and stratified random sampling technique was used. Burnout was assessed using the Oldenburg Burnout Inventory (OLBI). It was a descriptive cross sectional study. Data was collated and analyzed using the Statistical Package for Social Sciences version 21 (SPSS-21). Results: Age, gender, religion, marital status, income, cigarette smoking and alcohol consumption were socio-demographic factors significantly associated with burnout among the respondents. Use of stimulants, change in eating habits and change in sleeping pattern were strategies identified among respondents to address burnout. Organizational measures used to mitigate burnout include: triaging, clinic separation, change in work schedule, infection control measures, and provision of training of HCWs on infection control. Conclusion: Socio-demographic factors are important predictors of burnout among HCWs and various strategies involving individual and organizational approaches are currently been used. There is a need to address these factors using safe and reliable strategies as this would help to improve the wellbeing of health care workers and address burnout leading to a desirable outcome both for the worker and the health care institution.

Key-words: Burnout, predictors, health care workers, Oldenburg burnout inventory

Introduction

Burnout is a work-related stress syndrome resulting from chronic exposure to job stress. The term was introduced in the early 1970s by psychoanalyst Freudenberger and has subsequently been defined by Maslach et al as consisting of three qualitative dimensions.[1,2] The World Health Organization also defined burnout as a form of chronic occupational stress consisting of three dimensions: (i) exhaustion; (ii) depersonalization or cynicism; and (iii) feelings of inefficacy.[3]Freudenberger (1974) conceived burnout to be the "over-committed" or the "super achiever" sickness. The term burnout can be used as a shortcut for a psychological syndrome encompassing three dimensions: emotional exhaustion (EE), depersonalization (DP), and decreased sense of personal accomplishment (PA), according to the Revision of the International Classification of Diseases (ICD-11).[4] In this three-dimensional model, EE refers to feelings of work overload and depletion of one's emotional resources; DP refers to one's negative response to other people, both colleagues and patients, in a cynical way; PA is the tendency to negatively evaluate the worth of one's work and feel insufficient regarding the ability to perform one's job. Therefore, healthcare providers experiencing DP can become insensitive and less empathetic when managing their patients, creating distance in their provider–patient contact. DP may negatively impact professionalism. Deficits in PA may lead to feelings of incompetence in professional efficacy, which may impair healthcare professionals' ability to accomplish

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their tasks. Burnout often involves feelings of a lack of control and a diminished sense of PA at work, which further reinforces a sense of being underestimated.[5,6]

Burnout can occur in any kind of profession, however, healthcare workers seem to be at particular risk for burnout.[7]This has been associated with work-to-family conflict, unrealistic expectations of patients, ongoing pressure on continuous learning, long working hours, excessive bureaucracy, organizational issues, poor communication among healthcare professionals, and personal issues.[8] This may have significant negative personal (substance abuse, broken relationships, and even suicide),but also important professional consequences such as lower patient satisfaction, impaired quality of care, and even up to medical errors, potentially ending up in malpractice suits with substantial costs for caregivers and hospitals.[9]

Healthcare worker burnout has been linked to increased patient safety risk, low work professionalism, and low satisfaction with the care encounter. There has been consistency in the association between burnout syndrome in healthcare workers and suboptimal and unsafe care of patients.[10] The prevalence of burnout is increasing and also affects more than half of all practicing physicians.[11] The burnout epidemic is detrimental to patient care and may exacerbate the impending physician shortage. Burnout has reached epidemic levels, with a prevalence near or exceeding 50%, as documented in national studies of both physicians in training and practicing physicians.[12]

Therefore, alertness to the phenomenon with prompt recognition together with the development of adequate coping personal and organizational strategies is essential in dealing with this important problem in contemporary healthcare.

Socio-demographic factors are associated with burnout. In a study in the US, burnout was more in the female physician, (70% of female physicians and 61% of male physicians), possible reasons for this could be additional stress factors apart from work such as family commitments and child care.[13]Various factors have been identified as risk factors with female physicians more likely to experience burnout than their male colleagues.[14,15]In Nigeria, professional-grade, age and years in practice, but not specialty, gender, or marital status were associated with the exhaustion domain, whereas only age was associated with the disengagement domain of burnout.[16]

In the United States, measures identified among doctors in coping with stress are: eating more, in 29% of doctors, drinking more alcohol, in 19% of doctors, and taking more stimulants and medications in 2%.[13]Personal measures being envisaged by some physicians to reduce stress were retiring earlier than previously planned in 25% and a career change away from medicine in 12% of physicians. However, a little more than half (51%) said they were not planning any changes.[13]

Various strategies have been employed in different health institutions to curb burnout among health workers however there is still a need to identify socio-demographic factors predisposing to burnout. There is little evidence documenting the relationship between burnout in healthcare workers and socio-demographic characteristics in North-Central Nigeria. Also identifying and addressing challenges as well as strategies to employ would improve both health care workers and patient wellbeing.

Thus, this study will seek to inform future practice and research by assessing burnout among health care workers, socio-demographic factors, as well as strategies employed.

Study Design:
It was a cross-sectional descriptive hospital-based study.

2.2 Study Area

The study was conducted at the University of Ilorin Teaching Hospital (UITH). The UITH, located in Ilorin East local government area of Kwara State, Nigeria, is a tertiary health care institution that provides health care to inhabitants of Ilorin, its environs, and inhabitants from border towns and villages of surrounding states. It also stands as a referral centre for primary and secondary care facilities

Study Population

This consists of health care workers (doctors, nurses, pharmacists, and laboratory technicians) male and

female at UITH, during the studied period and who satisfied the inclusion criteria.

Inclusion and exclusion criteria

Inclusion Criteria

All health care workers male and female at UITH, during the studied period who are 18 years and above.

Exclusion criteria

Health care workers that were too sick to participate in the study, in order not to delay early access to prompt care.

Sample size: To determine the minimum sample size (n) to test the hypothesis, accuracy, confidence level, and prevalence rate need to be considered. A prevalence of burnout among healthcare workers of 69% from the study by Nwosu et al in Enugu, Nigeria, was used.[17]For precision, the desired degree of accuracy (d) or margin of error allowed is 0.05. To ensure that the results obtained from the sample population have a 95% confidence level (z) of representing the true population, a value of 1.96 was used.

The formula for determining the minimum sample size for health studies used by Leslie Kish will be used, which is:[18]

$n = Z^2pq/ d^2$

n = minimum sample size

z = standard normal deviation or 95% confidence level assuming a normal distribution (1.96)

p = estimated prevalence rate of burnout among health care workers (69%% or 0.69)[4] q is the proportion of healthcare workers that do not have burnout.

However since the study population is less than 10,000 (1930), the sample size is adjusted using this formula:[18] $nf = n/1 + (n/N)$

The final sample size was 312

A total of 320 HCWs participated in the study.

The financial burden of this research was borne by the authors. The study was approved by the Ethical Review Committee of UITH. Each participant voluntarily gave informed consent.

Data was collected over three months and analyzed over a month.

Sampling Technique

The stratified random sampling technique was used to recruit eligible participants**.** This was because the participants were non-homogeneous groups; hence sample size was proportionally allocated.

Data collection and instruments

Data were collected using the structured and semi-structured interviewer-administered questionnaires, which included socio-demographics, and burnout assessment using the Oldenburg Burnout Inventory (OLBI) tool. The OLBI is a reliable and valid measurement instrument for the assessment of burnout.[19] It has two subscales exhaustion and disengagement (from work).[20]

OLBI can be used to measure burnout (with its dimensions) and work engagement as bipolar constructs.[21] In addition, it provides high-scale reliability (Cronbach's alpha=0.63) as well as on its subscales, exhaustion (Cronbach's alpha=0.87) and disengagement (Cronbach's alpha=0.81).[19] It has been used in Nigerian studies as well.[16,17] To identify the burnout groups, mean scores ≥2.25 on the exhaustion domain will be considered as having high exhaustion, while those who scored less than 2.25 will be regarded as having low Exhaustion. For the disengagement domain mean scores ≥2.1 will be considered as high while those who scored less than 2.1 will be regarded as having low disengagement.

These cut-off scores are adapted from a previous study on burnout among Swedish healthcare workers conducted with the OLBI.[22] The mean score for each domain will be obtained by dividing the total scores for the items in the domain by the number of items in the domain; which is eight (8) in each case. The following categories were obtained:

Burnout group: high exhaustion and high disengagement; Exhausted group: high exhaustion and low disengagement; Disengaged group: high disengagement and low exhaustion; Non-burnout group: low disengagement and low exhaustion

Pre-test

The questionnaire was pre-tested in the general outpatient clinic of General Hospital, Ilorin, with 10% of the sample size and necessary adjustments made.

Data analysis:

The collected data was sorted, coded, and entered into the computer for analysis using the Version 21 software packages of the Statistical Package for Social Sciences (SPSS-21). Results were presented using frequency tables and charts. Frequency distribution was generated to reveal percentages and proportions of the various variables. Chi-square was also used to assess the association between burnout and socio-demographic factors. The level of significance of this study was set at 5% ($p < 0.05$).

Results

Socio-demographic Characteristics of the Participants

A total of 320 healthcare workers (HCWs) participated in the study. Table 1, shows the socio-demographic characteristics of respondents. HCWs aged less than 30 and between 31- 40 years constituted a greater percentage of the respondents 115(36%), while only 6(2%) were above or equal to 61 years of age with a mean age of 40 ± 9.8. The gender distribution revealed a preponderance of female respondents of 189 (59%) with a female to male ratio of 1.4:1. Married individuals constituted 68% of respondents. The Yorubas(94%) and individuals with 1-5 children (96%)constituted the highest proportion of the HCWs. A large proportion of the workers earned above 30,000 (92.5%). And most of the HCWs were nonsmokers and did not take alcohol (96%).

Prevalence and Pattern of Burnout among Respondents

Table 2 shows the prevalence of burnout amongst HCWs. The study revealed a prevalence of 71%, as 227 of the respondents had burnout, while 93 were without burnout. Among those without burnout, 8% (26) were disengaged, 14% (45) were exhausted and 7% (22) had no burnout.

Table 1: showing the socio-demographic characteristics N=320

Variable	Frequency(n)	Percentage (%)
Age Group		
≤30	115	36
31-40	115	36
41-50	51	16
51-60	33	10
≥61	6	2
Gender	131	41
Male	189	59
Female		
Religion		
Islam	175	54
Christianity	143	44.7
Others	2	0.6
Marital Status		
Married	219	68
Singles	91	28
Separated or Divorced	5	2
Widowed	5	2
Ethnic Group		
Yoruba	301	94
Igbo	7	2
Hausa	10	3
Others[a]	2	1
Number of Children		
0	2	0.6
1-5	307	96
6-10	6	1.9
above 10	5	1.6
Income		
≤30,000	24	7.5
>30,000	296	92.5
Smoking Status		
Current	6	2
Former	6	2
Never	30	96
Alcohol Status		
Current	10	3
Former	2	1
Never	308	96

a: other ethnic groups found in Kwara such as Nupe, Bariba, Fulani

Table 2: Prevalence and pattern of burnout N=320

	Frequency	Percentage (%)
Burnout Present	227	71
Disengaged	26	8
Exhausted	45	14
No Burnout	22	7

Table 3: Showing the Relationship between socio-demographic factors and burnout N=320

Socio-Demographic	Burnout		Df	X^2	*P* value
Age group	Present (%)	Absent (%)			
≤30	112(35%)	3(1%)	5	75.94	*0.00*
31-40	58(18%)	57(18%)			
41-50	30(9%)	21(7%)			
51-60	22(7%)	11(3%)			
≥61	5(2%)	1(0%)			
Gender					
Male	108(32%)	23(19%)	3	10.512	*0.04*
Female	119(39%)	70(10%)			
Religion					
Christian	97(30%)	46(14%)			*0.01*
Islam	128(40%)	47(15%)	2	4.2187	
Other	2(1%)	0(0%)			
Marital Status	169(53%)	50(16%)			
Married	48(15%)	43(13%)			
Singles	5(1.5%)	0(0%)	3	87.025	*0.00*
Separate or Divorce	5(1.5%)	0(0%)			
Widowed					
ETHNIC GROUP	6(2%)	4(1%)			
Hausa	4(1%)	3(1%)			
Igbo	215(67%)	86(27%)	1	15.432	*0.62*
Yoruba	2(1%)	0(0%)			
Others					
Number Of Children					
0	0(0%)	2(0.6%)			
1-5	216(68%)	91(28%)			
6-10	6(1.9%)	0(0%)	3	29.250	*0.05*
>10	5(1.5%)	0(0%)			
INCOME					
≤30,000	16(5%)	8(2.5%)	2	231.2	*0.00*
>30,000	211(66%)	85(26.5%)			
SMOKING					
Current	4(1.2%)	2(0.6%)			
Former	4(1.2%)	2(0.6%)	2	1.487	*0.00*
Never	219(68.4%)	89(28%)			
ALCOHOL					
Current	3(0.9%)	7(2.1%)			
Former	2(0.6%)	0(0%)	5	32.411	*0.04*
Never	222(69.4%)	86(27%)			

Table 4: Logistic Regression

Variable	Coef	S.E	Odds Ratio	95% CI Upper	Lower	p-value
Gender						
Male	1.001	2.071	0.401	0.144	0.763	
Females	1.059	2.679	0.884	0.861	0.891	0.03
Age						
≤30	2.960	13.224	0.273	0.179	0.132	
31-40	-13.45	0.911	1.726	0.298	0.282	
41-50	-4.0326	1.4131	0.226	0.111	0.177	
51-60	1.0223	0.0221	0.116	0.261	0.305	
≥61	-1.927	0.2144	0.118	0.971	0.335	0.00
Religion						
Christianity	-1.017	1.874	0.812	0.00	0.00	
Islam	-1.608	2.194	0.922	0.00	0.00	
Others	0.5122	2.121	0.192	0.00	0.00	0.00
Marital status						
Single	18.728	40189.7	0.245	0.00	0.00	
Married	-19.513	40193.8	0.00	1.000	0.00	
Widow	-21.006	40193.8	0.00	0.00	0.00	
Separated	19.619	44931.7	0.00	0.00	0.00	0.00
Marriage						
Monogamy	1.446	2.332	0.922	0.641	0.291	
Polygamy	-1.260	1.881	0.146	0.441	0.119	0.03
Education						
Primary	-1.544	4.186	0.213	0.21	0.12	
Secondary	2.296	0.982	0.184	0.391	0.201	
Quranic	7.524	1.010	0.212	0.181	0.122	
Tertiary	3.272	0.933	0.155	0.133	0.196	0.03
Ethnic group						
Hausa	-21.717	14200.5	0.388	0.206	0.071	
Igbo	20.005	40192.9	0.311	0.112	0.021	
Yoruba	22.018	40192.9	0.184	0.109	0.129	0.09
No of Children						
0	-17.435	9009.2	0.719			
1-5	-19.541	17.427	0.009	0.03	0.00	
6-10	-1.127	2.899	0.904	0.65	0.00	
>10	1.008	1.704	0.281	0.010	0.00	0.01
Smoking						
Current	738	2.001	0.00	0.00	0.00	
Former	1.596	2.502	0.89	0.00	0.00	
Never	1.686	.001	0.77	0.00	0.00	0.00
Alcohol						
Current	-10.109	2.209	0.126	0.00	0.00	
Former	0.155	1.098	0.665	0.00	0.00	
Never	0.187	11011	0.198	0.00	0.00	0.00

Relationship between socio-demographic factors and burnout

Burnout was highest among age group less than 30 years (35%) and least among workers above 60 years (2%). This relationship was statistically significant. The females had a higher prevalence of burnout (39%) compared to males (32%), this was statistically significant. Burnout was highest among Muslims (40%) and the married workers (53%). Workers with income more than 30, 000 naira minimum wage (66%), those who never smoked (68.4%) or took alcohol (69.4%) had the highest prevalence of burnout. These associations were statistically significant. The ethnic group and number of children had no statistically significant association with burnout.

Logistic Regression

On Logistic Regression, age, gender, religion, marital status, type of marriage, education, smoking, and alcohol consumption were further shown as predictors of burnout.

Table 5: Measures used to mitigate burnout among respondent

Personal Factors	Yes	No	Total
Use of stimulant	(86) 26.88%	(234) 73.13%	100%
Change in my eating	(181) 56.56%	(139) 43.44%	100%
Change in my sleep	(208) 65.00%	(112) 35.00%	100%
Organizational Measures			
Triaging	(270) 84.38%	(50) 15.63%	100%
Clinic separation	(226) 70.63%	(94) 29.38%	100%
Change in work schedule	(218) 68.13%	(102) 31.88%	100%
Infection prevention	(251) 78.44%	(69) 21.56%	100%
Providing clinicians with infection prevention and control training	(244) 76.25%	(76) 23.75%	100%

Measures used to mitigate burnout

Among the HCWs, 26.88% used stimulants to stay awake and prevent burnout at work, 56.56% attested to changing their eating habit and 65% had to change their sleeping pattern due to burnout.

Also, in the hospital, measures used to mitigate burnout include: Triaging, clinic separation, change in work schedule, infection control measures, and provision of training of HCWs on infection prevention and control. This was reported by 84.38%, 70.63%, 68.13%, 78.44% and 76.25% of HCWs respectively. This shows that triaging was the most used approach by the hospital to mitigate burnout.

Discussion

Burnout was highest among age group less than 31 and least among workers above 60 years. [23] This relationship was statistically significant. This is similar to findings by Salihu et al at UITH in a study among resident doctors where they found that being a younger resident doctor was a significant predictor for burnout[24] Likewise, Nwosu et al, in a study among physicians in five tertiary health institutions in Nigeria, reported that Physicians' age was associated with the exhaustion domain and disengagement domain of burnout.[16] Similarly in a systematic review, Gomez- Urquiza et al reported that younger age was a significant factor in the emotional exhaustion and depersonalization of nurses.[25] This has been found to be linked with some complications in this age group for example, in Tanzania, Tsai et al found that young female participants and young doctors/nurses with burnout had a higher odd ratio of metabolic syndrome compared to other groups (OR = 2.43 and 2.32, $p < 0.05$). A possible reason for high burnout in the age group in the index study could be because this group consists of young and active individuals who would have been engaged in more activities at work than workers in other age groups, amidst a massive exodus of health care professionals and the COVID 19 pandemic.

The females had a higher prevalence of burnout (39%) compared to males (32%), this was statistically significant. This is comparable to findings in the USA where a higher proportion of females had burnout compared to males (70% of female physicians and 61% of male physicians).[13] In Ekiti Nigeria, Adebayo et al found that gender had a significant effect on burnout as female health workers were more vulnerable to burnout than their male counterparts.[26]Various factors have been identified as reasons why female health workers are more likely to experience burnout than their male colleagues.[14,15]

Possible reasons for these findings in the index study and findings in the USA could be additional stress factors apart from work such as family commitments and child care.[13] In China, a mid-level professional title and having an administrative position were predisposing factors for burnout among female psychiatric nurses.[27] On the contrary, Zhang et al reported that the rate of burnout in male psychiatric nurses (32.24%) was significantly higher than that in female psychiatric nurses.[27] This along with the perceived negative impact of the COVID-19 pandemic on medical work were significant factors in the study by Zhang and his colleagues.[27]

Married healthcare workers constituted the highest proportion of participants with burnout in the index study (53%). This is similar to findings by Zhang et al, who reported that being married was associated with more burnout in female psychiatric nurses.[27] Likewise, in Ghana, Odonkor et al, revealed that health workers who are parents or married tend to suffer burnout more than those who are single.[28] In China, according to Cheng et al, marriage was an independent risk factor for personal burnout among HCWs; however, the effect of marriage on workplace burnout in China was non-significant after controlling for risk factors, this is different from findings in the index study.[29] Possible reasons for the difference in the index study and the study in China may be the methodology used as the Copenhagen Burnout Inventory was used in China while the Oldenburg Burnout Inventory was used in the index study. Hence, helping healthcare workers maintain well-being in marriage or family living may be effective in decreasing burnout.

Workers with income more than 30, 000 naira minimum wage (66%) had more burnout. This is in contrast to findings in Japan where long-term care workers with high compensation levels were found to be more likely to have low burnout levels.[30] Possible reasons for findings in the index study include: having to do other jobs to make more income due to the low income from the hospital work. Also, workers in these group may have to run more errands or take more night shifts.

Those who never smoked (68.4%) constituted the highest proportion of participants with burnout. This is in contrast to a cross-sectional survey by Xia et al in China, which revealed that smokers were more likely to experience burnout.[31] It is also different from findings in Serbia where cigarette smoking was significantly associated with cynicism, with smokers often showing higher cynicism compared to non-smokers (40.7% vs. 32.3%; p = 0.023).[32] Possible reasons for the differences in the result found in the index study compared to others may be differences in the socio-demographics of the study population and that of others.

Those who never took alcohol (69.4%) had the highest prevalence of burnout. This is different from findings by Oriskofich et al. who reported that surgeons who were burned out (odds ratio, 1.25; P = .01) were more likely to have alcohol abuse or dependence as the emotional exhaustion and depersonalization domains of burnout were strongly associated with alcohol abuse or dependence.[33] Also, in a qualitative descriptive study in Australia, several participants with burnout described increased alcohol consumption because of the COVID-19 pandemic, particularly due to the stress of working in an environment where resources were scarce. Workplace factors such as overtime, missed breaks, and heightened workload were all described as driving stress, and in turn increased alcohol consumption.[34] Possible reasons for the finding in the index study could be that alcohol consumption is used as a means of relief from stress as was seen in the study by Oriskofich and Searby, however, those who never consumed alcohol in the index study had persistence of burnout as reported.

Various wellness strategies can be applied by HCWs to cope with the symptoms of burnout. These include: having good relationships; spiritual practices; change in work attitudes; being involved in education and/or research; managing schedule and discontinuing unfulfilling aspects of practice.[9] In the index study, 26.88% of the HCWs used stimulants to stay awake and prevent burnout at work, 56.56% attested to changing their eating habit and 65% had to change their sleeping pattern due to burnout. These methods have also been reported in other studies as means of controlling burnout.[9,35] Likewise, maintaining basic self-care including eating a nutritious diet, getting at least 30 minutes of daily exercise, and creating a good sleep routine has been highlighted as strategies to curb burnout.[35]Similarly, in the United States,

measures identified among doctors in coping with stress are: eating more, in 29% of doctors, drinking more alcohol, in 19% of doctors, and taking more stimulants and medications in 2%.[13] However in the USA, retiring earlier than previously planned (in 25% of physicians) and a career change away from medicine(12% of physicians) were identified strategies for burnout control.[13] The desire to work despite the consequences of burnout to make a living and provision of self-fulfillment may be reasons for the use of the above measures in the index study as well as other studies. Self-care approaches such as exercise and eating a nutritious diet may be beneficial to the workers' health.

Systematic reviews suggest that organization-based interventions are more effective in reducing physician burnout than interventions targeted at individual physicians.[9] In the index study, organizational measures used to mitigate burnout include: triaging, clinic separation, change in work schedule, infection control measures, and provision of training of HCWs on infection control. This may have been emphasized because COVID-19 was a pandemic at the time. Highlighted measures in other studies are: leadership traits, the latitude of control and autonomy, collegiality, diversity, teamwork, top-of-license workflows, electronic health record (EHR) usability, peer support, confidential mental health services, work-life integration and reducing barriers to practising a healthy lifestyle.[36]Organizational attention to HCW's well-being can improve the quality of care and the patient experience, increase HCW recruitment, retention, and productivity, and mitigate some risks healthcare organizations face as they grow.

Conclusion

Burnout is highly prevalent among HCWs and has been associated with negative outcomes for HCWs, patients, and health-care organizations. The significant socio-demographic predictors of burnout were age, gender, religion, marital status, type of marriage, education, smoking, and alcohol consumption. Reducing burnout and increasing workers' well-being is of utmost importance. Risk situations should be identified and preventive measures should be implemented early to avoid future harm. Also, additional prospective studies to identify individual and organizational interventions that can promote wellness and evaluate its effect on productivity, patient care, and patient satisfaction are paramount. Based on our findings, it is recommended that measures should be put in place in hospitals to assess burnout and burnout levels to ensure people who experience burnout are identified and safe means of control are made readily available to all.

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