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HEALTH PSYCHOLOGY | RESEARCH ARTICLE

Locus of control and use of health services: Case of school attending adolescents in Nigeria

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Abstract: Studies have sought to establish a link between psychological factors and use of reproductive health services. Evidence is still needed on the association between locus of control and use of reproductive health services amongst adolescent populations in sub Saharan region. Our sample is made up of a representative sample of 3,065 secondary school female adolescents aged between 13 and 19 years in a cross-sectional survey. The correlation analysis showed that there was a relationship between adolescents' locus of control and their use of Reproductive Health Services. Also, there was a slight difference between the mean of individuals who attribute outcome of life events to external factors and those who do not in their use of reproductive health services.

Subjects: Behavioral Sciences; School Psychology; Counseling

Keywords: adolescents; sexual and reproductive health services (SRH); utilisation; locus of control; attribution; Nigeria

ABOUT THE AUTHOR

I am interested in children and young people. My research focused on adolescent sexuality. This manuscript is part of my PhD dissertation which explored psychosocial determinants of sexual abuse of school-attending adolescents and their use of counselling and health services. The Psychosocial factors examined were locus of control, self esteem, peer influence and parent child relationship. Use of services by adolescents is important in early disease detection and treatment. Locus of control is one of the psychological determinants of health service use. Someone assisted me with data analysis for my dissertation but did not make enough contribution to be an author. A number of manuscripts have been published from my dissertation. I have no manuscript with substantial similar content published or in consideration for publication. Some aspects of this manuscript were presented at the 13th World Congress on Public Health 2012 in Addis Ababa, Ethiopia. My dissertation was partially funded by the African Doctoral Dissertation Research Fellowship offered by the African Population and Health Research Centre (APHRC) in partnership with the International Development Research Centre (IDRC).

PUBLIC INTEREST STATEMENT

Decision-making is part of our daily live. A failure to decide is a choice. Ability to control life events and its outcomes affect our decisions. Some believe that they can control the events of their life while some believe that life events are subject to fate, or controlled by circumstances beyond their control. Most people are not aware of how this perception affects health related decisions. This study showed how this perception influences adolescent decision to use health services. About three thousand school attending adolescents participated in this study with permission from their carers and school authorities. The findings of this study showed that when services are available, adolescents would make a healthy choice to use it without leaving it to chance.

1. Introduction

Use of health services is essential in maintaining a healthy life. It boosts psychological well-being and reduces mortality rate due to early disease detection (Bearinger, Sieving, Ferguson, & Sharma, 2007; Kaestle, Halpern, Miller, & Ford, 2005; Kennedy Bulu, Harris, Humphreys, Malverus, & Gray, 2010; Leslie, 2008; Ralph & Brindis, 2010). Positive attitude towards the use of health services will increase uptake of services and achievement of health millennium development goals.

Behavioural research on use of reproductive health services by adolescents focus on the roles psychological variables play in health behaviour and activities (Debnam et al., 2012; Lang et al., 2013; Michel, Diana, Kate, & Christine, 2011; Pilgrim & Blum, 2012). Research shows that locus of control influence health-related behaviour (Ajzen, 2002; Cross, March, Lapsley, Byrne, & Brooks, 2006; Halvari, Halvari, Bjørnebekk, & Deci, 2013; Schepers, Visser-Meily, Ketelaar, & Lindeman, 2006; Sperling, Schilling, Glosser, Tracy, & Asadi-Pooya, 2008).

Locus of Control (LOC) is a personality construct that describes a person's orientation regarding what controls their life outcome. This definition was derived from Mosby's Medical Dictionary's (2009). Bernardi (2011) LOC as an individual's belief concerning their control over their environment. In the health dimension, Lorenc, Ilan-Clarke, Robinson, and Blair (2009) define LOC as the extent to which people perceive their health, treatment, course of illness and other health related factors, to be under their control or external to them. From Lorenc et al. (2009) definition, individuals are categorised either as externals or internals and people have varying degrees of internality and externality, Rotter (1966) in Gan, Shang, and Zhang (2007).

Internals are individuals who perceive themselves to be in control of their life outcomes, they believe that rewards they receive are contingent upon their own behaviour, are confident that they can control their destinies, believe that they are responsible for what happens to them (Gan et al., 2007; McIntyre, Srivastava, & Fuller, 2009; Pruessner et al., 2005; Smith, Hume, Zimmermann, & Davis, 2011). Lorenc et al. (2009) opines that individuals high in internal locus of control are more likely to carry out health-promoting behaviours, whereas those with high external LOC will be unlikely to engage in health-enhancing activities.

Externals are individuals who believe that their life is controlled by external circumstances Burkhart and Rayens (2005). Externals think that rewards are not dependent upon their actions and that the events that happen to them are the result of external factors, such as others' influences or luck Gan et al. (2007). Morling and Evered (2006) asserts that externals believe that what happens to them is driven by external forces like chance. Externals attribute their health to chance, Lorenc et al. (2009).

2. Some studies on locus of control and health behaviour

Locus of control has been studied in relation to health-related variables. A study by Sales et al. (2007) reveals that STD-related shame was associated with locus of control. Participants in the study with external locus of control had higher levels of STD-related shame. In Afifi's (2007) article, adolescents with past history of physical abuse during childhood score high on external LOC. Hillman, Negriff, and Dorn (2010) revealed that externally controlled adolescents has lower use of contraceptives than those with an internal locus of control.

Burkhart and Rayens (2005) study on the relationship between children's self-concept, health locus of control and adherence showed that adherence was positively correlated with internal health locus of control. Rubin, Gold, and Primack (2009) study determine associations between depressive symptoms, locus of control and sexual outcomes in a cohort of female adolescents showed that high levels of depressive symptoms was associated with external locus of control. Gloppen, David-Ferdon, and Bates (2010) assessed the association between belief in the future, self-determination, clear and positive identity, and self-efficacy and adolescent sexual and reproductive health outcomes. Their study revealed that belief in the future and self-determination were protective factors for reproductive outcomes.

The study of Gan et al. (2007) on the predictive value of locus of control and coping flexibility of student burnout revealed that LOC was significant in predicting burnout but insignificant when combined coping flexibility variables. Another study by Firth, Frydenberg, and Greaves (2008) on perceived control and adaptive coping for 98 adolescents with learning disabilities showed that internal LOC was high in the coping group and this was significant at follow-up testing while external LOC was higher in control group and increased at follow-up.

Furthermore, Baiocco, Laghi, and D'Alessio (2009) study to examine the psychometric properties and construct validity of the General Decision-Making Scale showed that adolescents with internal locus of control used a rational style of decision-making while externally controlled adolescents were more likely to use dependent and avoidant decision-making style.

The purpose of this study was to investigate the influence of locus of control (LOC) on the utilization of Sexual and Reproductive Health (SRH) services among female adolescents in Southeastern Nigeria. This study argues that internals will use more services than externals. The mediating variables, employed in this are age, parental status, location and association between the variables to use of services among a sample of school attending adolescent girls. Our general hypothesis was that there would be relationships between duo-dimensions of locus of control and use of reproductive health services by adolescent girls.

This study attempts to fill in the gaps on the roles played by psychological factors in the use of reproductive health services drawing on the ecological model. The ecological model was developed by Bronfenbrenner in 1974. The focus of the model is on the how factors in the environment interact to influence a person's behaviour. One of the basic assumptions of the theory is that the interaction within an individual's environment becomes complex as the person develops. It assumes that there are complex layers that influence and explain variations in an individual's behaviour. The layers are microsystems, mesosystem, exo-system, macro-system and chronosystem. Microsystems represent the intra-personal or psychological factors resident within an individual like locus of control. Meso-system factors are inter-personal and social factors within the child's family environment. The exosystem looks at interrelationship between the two levels as well as all the factors outside the home and individuals like peers, the school environment and the neighbourhood where an individual is located. The three systems are encompassed by the macro-system, which is the most distal to the individual and made up of the broader culture's norms, rules, expectations and values. This study is restricted to the micro-system level. This study assumes that individuals with internal locus of control will use health services more than their counterparts who have external locus of control. Individuals with internal locus of control believe that they should take responsibility for their health and actions while externals believe that fate or circumstances has power over them, irrespective of what they do to get things done.

3. Method

The sample consisted of 3,065 adolescent girls recruited from 33 secondary schools in southeast, Nigeria. Multistage sampling was used to ensure a representative sample. The mean age of participants was 14.77 (SD = 4.5).

3.1. Sampling

The sample was drawn from 33 government secondary schools in 3 states. The states were randomly selected from five states in the region. The selected states were further stratified according to senatorial zones and local government areas (LGA). Afterwards, the schools were stratified according to type (co-educational and all girls).

Sample size for the study was determined using a standardised statistical table for sample size requirements for testing the value of a single proportion at the 5% significant level and 95% power (Woodward, 2005, p. 743). The table value is 3,001. To take care of attrition and non-response, 2%

was added to the table value bringing the total sample size to 3,060. All respondents gave their assent to participate in the study.

Ethical approval for the study was obtained from the University of Ibadan (UI/UCH Ethical Committee). Permission was sought from the heads of the sampled schools and parents gave consent for their wards to participate in the study.

3.2. Measures

A brief locus of control scale was used to measure the locus of control of the participants. The instrument has two alternative responses (yes and no) where a lower score indicates an internal locus of control; higher scores indicate an external locus of control. Scores range from 0 to 14. The scale has 14 items and the mean was used to group the participants under external or internal locus of control. Anyone whose score is between 8 and 14 was grouped into external locus of control and anyone whose score is between 0 and 7 has internal locus of control. This scale was adopted for the study without modification. The scale showed a reliability of .83 alpha coefficient after revalidation.

Reproductive Health Utilisation scale drew largely from the scales of Ngomi (2008) on reproductive health use and measuring service use. The scale has three sections: the first section looked at demographics, awareness about health service, visitation to the reproductive health service centre and the type of service used the frequency of service used and the barriers to the use of service. The scale showed a reliability of .81 alpha after revalidation.

3.3. Data analysis

The data was analyzed using Statistical Package in Social Sciences (SPSS); descriptive statistics involved frequency counts, cross tabulations and percentages. Inferential statistics involved Pearson moment correlations, *t*-test and linear regression. Multiple response descriptive analysis of SPSS was used to determine prevalence of use. The analysis of the Pearson moment correlation was guided by Taylor's (1990, p. 37) categorisation. Correlation coefficient (*r*) values less or equal to .35 represent low or weak correlations, values between .36 and .67 represent modest or moderate correlation, values between .68 and 1.0 show strong or high correlations and .90 represents very high correlations.

4. Results

Eighty-two per cent of the participants are between 15 and 18 years, 14% of respondents were less than 14 years while 4% of the respondents are above 19 years. The prevalence of use of reproductive health service was 29.3%. Results from Table 1 show that 62% of respondents were aware of Reproductive Health Service Centres (RHSC) only 30% utilised the service.

Table 1. Descriptive statistics of study variables

	Per cent
Age	
Early adolescence	378 (12.3)
Middle adolescent	2,062 (67.3)
Late adolescent	417 (13.6)
Missing	208 (6.8)
<i>Awareness of reproductive health service centres</i>	
Yes	1,892 (61.7)
No	1,173 (38.3)
<i>Utilisation of reproductive health service</i>	
Yes	884 (28.8)
No	2,156 (70.3)

Table 2 shows the bivariate associations among variables of interest. There was a modest correlation between awareness and visit to RHSC, ($r = .60, p < .01$). There was a weak correlation between LOC and reproductive health use, ($r = .24, p < .01$). There was an inverse correlation between age and reproductive health use, ($r = -.03, p > .05$).

Table 3 shows the linear regression results. The model shows that the predictors account for about 42% of the variability in the scores. Table 4 shows that awareness, visit to RHSC, parent work status and LOC also predicted service use. For the t -test, equal variances assumed test was used due to similarity in standard deviations for external and internal LOC (5.35 and 5.26). The t -test indicates a significant difference between the mean score of externals and internals ($t = -6.84, p = .000$). That is, externals have a slightly higher mean score (7.39) than internals (5.89) in the use of RHSC.

Table 2. Bivariate correlations of key variables

		1	2	3	4	5	6
1.	Age	1					
s2.	Awareness	-.05*	1				
3.	Visit	-.03	.60**	1			
4.	LOC	.05**	.15**	.08**	1		
5.	Parents						
	Work status	-.04*	.16**	.08**	.21**	1	
6.	Rep. use	-.03	.31**	.25**	.24**	.29**	1
	Mean	2.01	.38	.22	21.5	.85	7.0
	SD	.53	.47	.41	5.37	.68	5.32

Notes: Rep. use = Reproductive health use; LOC = Locus of control.

* $p < .05$.

** $p < .01$.

Table 3. Linear regression showing some covariates to service use

R	.420 ^a
R ²	.176
Standard error of the estimate	4.81721
Regression	14,161.417
Residual	66,158.951
Total	80,320.369

^aConstant

Table 4. Table showing the variables and significant contribution

	Standardised coefficients (Beta)	t	sig
Constant		3.55	.000
Age	-.018	-1.06	.289
Awareness	.179	8.25	.000
Visit	.119	5.56	.000
PWS	.223	12.73	.000
LOC	.133	7.61	.000

Notes: PWS = parents work status; LOC = locus of control.

5. Discussion

The purpose of this paper was to examine the influence of locus of control, duo-dimensions of LOC (externals and internals) and use of reproductive health services by adolescent girls. The result showed that the prevalence rate of utilisation was low; less than 30%. The study by Hindin and Fatusi (2009) confirms that utilisation of reproductive health service by adolescents is low. This could be influenced by scarcity of adolescent friendly RHSC's. Young people would not access services in any centre that will not cater for their needs.

In Bivariate analyses, there was a positive correlation between LOC, awareness of RHSC, prior visit to the centre and utilisation. Although association does not mean causality. However, the author assumes that awareness arouses curiosity to visit and consequently, service use. Prior visit also enhances familiarity with the environment and staff. Jones, Purcell, Singh, and Finer (2005) supports the argument that prior visits to RHSC influence utilisation. The implication is that interventions targeting adolescent should include visit to RHSC, to increase familiarity and accessibility. Age was inversely associated to use of reproductive health service that means that as age increase people were less likely to utilize reproductive health.

LOC influenced use of reproductive services. Studies show that LOC has an influence on health behaviour (Ajzen, 2002; Cross et al., 2006; Halvari et al., 2013; Schepers et al., 2006; Sperling et al., 2008). The implication is; belief that RHSC will make a significant difference in young lives will motivate service use. Health education programs geared towards adolescents should target their belief about life events. Programs should be equipped to counter the level of misleading beliefs held by adolescents about the use of services. Use of SRH services will help in early detection of diseases and reduce the disease burden of the nation

T-test scores showed significant difference in services used by those with internal and external locus of control. One of the assumptions is that internals would use more services than externals but the reverse happened. This could be influenced by availability of RHSC, age and parental work status (Tables 5 and 6).

One of the limitations of the paper is that females participated in the study. Further studies should incorporate both males and females in the study sample.

Table 5. Difference in internal and external locus of control and use of service group statistics

	LOC	N	Mean	SD	Std. error mean
Rep. use	Internal	770	5.89	5.35	.19
	External	2,294	7.39	5.26	.11

Table 6. Independent samples test scores

		Levene's test for equality of variances		t-test for equality of means					95% confidence interval of the difference	
		F	Sig.	t	df	Sig. (2-tailed)	M.D	S.E diff	Lower	Upper
Rep. use	EVA	16.174	.000	-6.84	3,062	.000	-1.51	.220	-1.94	-1.07

Notes: M.D = mean difference; S.E diff = Std. error difference; EVA = Equal variances assumed.

6. Conclusion

This study established the fact that LOC is associated with the utilisation of reproductive health services. Awareness of RHSC and prior visit to RHSCs enhances familiarity and subsequent visit to RHSC.

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Competing Interests

The author declares no competing interest.

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