

They Learn from Home: The Effectiveness of Deschooled Learning on Mental Health and Behavior of Students during COVID-19 in Bangladesh

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Abstract

Background: In the age of extreme importance of schooling education, deschooled learning has received less importance. The purpose of this study is to explore deschooled learning and its effectiveness on preventive behaviors and mental health conditions of students in Bangladesh.

Methods: This study was designed following the quantitative method, and 1,085 responses were collected from social media platforms, using the snowball sampling technique. Binary logistic regression was used to measure and infer the proposed association.

Results: As per fully-adjusted regression models, the individuals who had more deschooled learning were 1.667 times (95% CI= 1.191, 2.332; P= 0.01) and 1.426 times (95% CI= 1.038, 1.958; P= 0.05) more likely to prevent contact from symptomatic and asymptomatic carriers, respectively. Moreover, the persons with higher deschooled learning were more likely to have better mental health conditions including less fear (B= -0.462; 95% CI= -0.955, 0.030; P= 0.1), lower anxiety (B= -0.482; 95% CI= -0.844, -0.119; P= 0.01), and more perceived vulnerability (B= 1.292; 95% CI= 0.497, 2.087; P= 0.01).

Conclusion: This study adds that policymakers may formulate health plans and policies for initiating informal health literacy (IHL) that may help increase deschooled learning and informal knowledge among individuals especially during a pandemic situation (like COVID-19) and help them to be safe by adopting preventive behaviors and maintaining better mental health conditions in low-income settings like Bangladesh.

Introduction

The school closure in Bangladesh during COVID-19 firstly began on March 17, 2020. Then, the state declared a countrywide lockdown on March 26, 2020, shutting down transports, offices, and institutions along with academic ones. The closure interrupted schooled education, affecting about 38 million students and nearly 1 million teachers. The interruptions continued, as online schooled learning could not be started at once. Consequently, the Learning-Adjusted Years of Schooling (LAYS) probabilistically drops down from 6.0 years in 2019 to 5.3 years in 2021.[1]

As for being in an information age, the students continue the learning process by exchanging information through interconnected media and information technology. Before the information age or postmodernism, knowledge stemmed from lengthy discourse. Afterwards, this never-ending discussion, known as a metanarrative, allowed for knowledge to change and grow over time. In postmodernism, there is no such thing as a metanarrative, rather knowledge is made up of many little narratives or micro-narratives[2] that have been reduced to bits of information in an interconnected and computerized world. [3] Therefore, learning remains a subject of knowing how to crop and harvest information. More specifically, learning becomes how to collect and assimilate information in a meaningful way to create knowledge.[4] For instance, in an information age, individuals as communication points send or receive text and information through the internet. After getting the information, the listeners then attain

knowledge and pass it to others.[5][6] Thus, the learning process continues with information among students.

Learning never ends in a schoolyard or university campus only after a degree is attained, as most of the masses gain knowledge mostly outside school. In same lane, Illich emphasized less on schooled education and dreamt of a 'deschooled society' that implies an approach to informal or incidental education.[7] Due to COVID-19 lockdown and school closure, concerned families found no way except to educate their children from homes.[8][9] As the students were separated from schools, and online classes were not feasible in the beginning in all developing countries, the students experienced a sort of 'deschooling'. [10][11] Since their learning continued informally or incidentally with the tools of information technology at their homes during the lockdown period, a form of deschooled learning, which is effective in Illich's term, emerged among students with various effects.

In line with institutionalized or schooled learning, Illich criticized modern medicine and medical institutionalization in many ways, referring them to focus on wrong and erroneous problems, to ruin healthcare, and to remove sufferings, pain, and sickness that all are natural to a human being.[12] According to Illich, we miss the human experience and cannot learn how to deal with the obstacles and challenges of life if we miss human suffering.[13] In addition, modern healthcare creates dependence, convincing us to believe that without healthcare we all will die. This dependence alleviates our responsibility to take care of our health. But in reality, self-responsibilities of health such as nutrition, sanitation, housing, and awareness are more essential for human survival compared to modern healthcare and antibiotics. Unfortunately, due to less learning, experience, and knowledge, humans have lost the art of self-care, and so they do not know how to separate and differentiate life-threatening illnesses from mild injuries and infections.[14][15] Therefore, learning the art of self-care and human experience seems effective for growing active responsibility of human's own health and self-care.

Actually, Illich did not stand against schools or hospitals, but he went against its heavy institutionalization.[16] As he noted, the rigid institutionalization makes the experts counterproductive and they produce the opposite of what they are supposed to achieve.[17] Hence, he sought out other ways, which are informal and incidental or mostly deschooled and deinstitutionalized, to effectively learn or teach or heal. Drawing a connecting line from Illich's deschooling and medical institutionalization thought, this chapter investigates the deschooled learning (about COVID-19) and its effectiveness on students' preventive behaviors and mental health conditions.

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Materials And Methods

Study design and participants

The target population was 1,085 students aged 18 and above in Bangladesh. A quantitative survey design with an anonymous online structured questionnaire was first developed and then was followed to conduct the study. As for being an online survey, the snowball sampling technique was utilized to reach the respondents even in marginal locations.

Data collection

The data were collected using online social media platforms from June 4 to June 22, 2020. To ensure exact and accurate data, possible and necessary explanations were provided with each question. After the completion of the pretest, the flaws and shortcomings were corrected and then the questionnaire was circulated among a bigger audience for data collection.

Measures and rating instruments

Deschooled learning (about COVID-19): Six variables were scored together for measuring the deschooled learning (about COVID-19) of students. These included: (1) Coronavirus spread by sneezing-coughing or water droplets from the mouth of the infected person; (2) Coronavirus can be transmitted through the used products or products been in contact with an infected person; (3) It does not take more than 14 days

for the symptoms of coronavirus to appear; (4) A person who has no symptoms of coronavirus can also spread corona; (5) There are drugs/medicines for coronavirus; (6) Corona can be cured by consuming *thankuni* leaves (centella asiatica), garlic and other herbal ingredients. Score 1 was given for each right answer and 0 otherwise. The total score of deschooled learning ranged from 0 to 6 where a higher score meant a higher level of learning.[1] The learning was considered deschooled, because it was not taught by the school or academic institution or not present in academic curricula. Rather, it was the individuals who learned that by themselves as a means of their own survival during the pandemic.

Preventive behavior: Preventive behavior, in this study, refers to the willing rejection or prevention from having contact with symptomatic and asymptomatic carriers. The information on preventive behavior was collected with these two queries: (1) In the past 2 weeks, did you willingly prevent contact from someone who had corona symptoms? (2) In the past 2 weeks, did you willingly prevent contact from someone who had no symptoms of coronavirus, but recently migrated or came from abroad? The first query was about the symptomatic carrier and the second one was about the asymptomatic carrier. All queries were dichotomized and a score of 1 was given if the response was “yes”, while 0 otherwise.

Perceived vulnerability to coronavirus: To assess respondents’ vulnerability to coronavirus, the Perceived Vulnerability to Disease Scale was utilized in this study.[2] It is a fifteen-item self-rating scale. The scale items were divided into two; perceived infectability (7 items) and germ aversion (8 items). 9 items were scored between 1 (strongly disagree) and 7 (strongly agree), while 6 other items were scored reversely between 1 (strongly agree) and 7 (strongly disagree). The total score of the scale ranged between 1 and 105. Internal reliability was found 0.75 in data collection mode.

Fear of coronavirus: The fear of respondents was measured by the Fear of COVID-19 Scale.[3] It is a self-report scale with a seven-item Likert-type measure. The response ranged from strongly disagree (1) to strongly agree (5). The total score of the measure ranged between 7 and 35 where a higher score meant higher fear. The internal reliability of the measure was 0.89 in this study.

Coronavirus anxiety: Anxiety was assessed using the Coronavirus Anxiety Scale.[4] The scale comprised of 5 items and the score ranged between 0 (not at all) and 4 (nearly every day, over the last 2 weeks). An example item includes “I felt dizzy, lightheaded, or faint when I read or listened to news about the coronavirus”. The total score ranged between 0 and 20 where a lower score indicated low anxiety, and a higher score meant higher anxiety. The internal reliability of the scale was found 0.93.

Ethical issues

This study used some internationally acclaimed and tested scales to collect data, and the method was rigorously reviewed by health and education professionals in their respective field. Before data collection, the respondents were clearly informed about the objectives of the research, their voluntary participation, and withdrawal from the survey at any time. Then, informed electronic consent was sought from each respondent. The anonymity of participants and the confidentiality of data were strictly maintained.

Statistical analysis

In the first stage, descriptive statistics were used to show socioeconomic, demographic, health conditions, and behavioral factors. In a later stage, binary logistic regression was run for assessing the association between deschooled learning and preventive behaviors. In the last stage, the effects of the deschooled learning on mental health conditions such as perceived vulnerability, fear, and anxiety were explored by using linear regression.

In descriptive statistics, the categorical data were presented in frequency and percentage, and continuous data were in mean and standard deviation form. In regression analysis, we played three models for each outcome, where the first model was unadjusted, the second model adjusted for socioeconomic and demographic factors (gender, age, place of residence, education, marital status, and daily average income), and the third model further adjusted for the health history of the respondents (overall health condition, acute physical health problem, previous mental health problem, hospital visit, and known person affected by coronavirus). SPSS version 23 (IBM Corp. Armonk, NY) was used for all data analyses.

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Results

In this study, respondents' socioeconomic and demographic profiles, health history, preventive behavior, and mental health conditions were assessed. Of all participants, 59.6% were male, and 40.4% were female. About four quintiles (78.1%) were from 18-25 age category, a quintile (20.6%) from 26-35, and 1.4% from 35+ age category. Nearly 88% of the respondents were unmarried, leaving only 12% married. More than two-thirds (67.7%) were from urban, and one-third (32.3%) were from a rural place of residence. A few respondents (8.1%) completed secondary and higher secondary education, more than half (58.5%) did graduation, and one-third (33.4%) did post-graduation. About one in ten respondents (9.1%) had less than \$5 daily income, while 14% had more than \$5 daily.

Regarding previous health history, nearly 36% of participants divulged that they had average health, and 64% had good physical health conditions. About 16% had an acute physical health problem, and 12% had a prior history of mental health problems. Besides, 60% of respondents added, they had known persons

affected by the coronavirus. Only 5.8% noted, they visited hospital in the last two weeks preceding the survey. The mean of deschooled learning was found 5.48 (out of 6) among the respondents.

Table 1: The association of deschooled learning with preventive behavior.

Variable	Preventive behavior					
	Preventing contact from symptomatic carrier (OR, 95% CI)			Preventing contact from asymptomatic carrier (OR, 95% CI)		
Deschooled learning	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
		1.953 (1.475, 2.586)***	1.884 (1.369, 2.593)***	1.667 (1.191, 2.332)**	1.726 (1.295, 2.300)***	1.638 (1.210, 2.218)***

*** p<0.001, ** p<0.01, * p<0.05; OR, Odds Ratio; CI, Confidence Interval.

Model 1: Unadjusted.

Model 2: Adjusts for socioeconomic and demographic factors (gender, age, place of residence, education, marital status, and daily average income).

Model 3: Further adjusts for health history (overall health condition, acute physical health problem, previous mental health problem, hospital visit, and known person affected by coronavirus) and mental health conditions (fear, anxiety, and perceived vulnerability).

Table 1 shows the odds ratio (OR) of deschooled learning on preventive behaviors of students. From logistic regression, model 1 presents unadjusted OR, where the students who had more deschooled learning (about COVID-19) were 1.953 times (95% CI= 1.475, 2.586; P<0.001) and 1.726 times (95% CI= 1.295, 2.300; P<0.001) more likely to reject contact with symptomatic and asymptomatic carriers, respectively. After adjusting for gender, age, place of residence, marital status, education, and daily average income in model 2, the OR attenuated a bit, 1.884 (95% CI= 1.369, 2.593; P<0.001) for preventing contact from symptomatic carriers and 1.638 (95% CI= 1.210, 2.218; P<0.001) from asymptomatic carriers. It indicates that the individuals with more deschooled learning were 88% and 64% more likely to reject contact with the risky agents (symptomatic and asymptomatic carriers). After further adjusting for health history, fear, anxiety, and perceived vulnerability in model 3, the OR again attenuated a bit, 1.667 (95% CI= 1.191, 2.332; P<0.01) for symptomatic carriers and 1.426 (95% CI= 1.038, 1.958; P<0.05) for asymptomatic ones.

Table 2: The association of deschooled learning with mental health conditions (perceived vulnerability, fear, and anxiety).

Variable	Mean	SD	Minimum, Maximum	B (95% CI)			
				Model 1	Model 2	Model 3	
Deschooled learning	5.48	0.757	1, 6				
	Perceived vulnerability to coronavirus	73.38	10.045	35, 105	1.521 (.735, 2.307)**	1.310 (.515, 2.105)**	1.292 (.497, 2.087)**
	Fear of coronavirus	21.73	6.143	7, 35	-.428 (-.912, 0.055)*	-.481 (-.974, 0.012)*	-.462 (-.955, .030)*
Coronavirus anxiety	3.30	4.545	0, 20	-.511 (-.867, -.154)**	-.494 (-.857, -.130)**	-.482 (-.844, -.119)**	

** p<0.01, * p<0.1; SD, Standard Deviation; CI, Confidence Interval.

Model 1: Unadjusted.

Model 2: Adjusts for socioeconomic and demographic factors (gender, age, place of residence, education, marital status, and daily average income).

Model 3: Further adjusts for health history (overall health condition, acute physical health problem, previous mental health problem, hospital visit, and known person affected by coronavirus).

Table 2 presents mean, standard deviation, minimum-maximum value, and beta coefficient of deschooled learning and mental health conditions. The students who possessed more deschooled learning (about coronavirus) were 1.521 times (95% CI= 0.735, 2.307; P<0.01) more likely to perceive them as vulnerable to coronavirus disease. As the learning increased among them, the COVID-19 fear and anxiety decreased (respectively B= -0.428; 95% CI= -0.0912, 0.055; P<0.1 and B= -0.511; 95% CI= -0.867, -0.154; P<0.01). After adjusting for gender, age, place of residence, marital status, education, and daily average income in model 2, beta coefficient for perceived vulnerability, fear, and anxiety changed a bit, 1.310 (95% CI= 0.515, 2.105; P<0.01), -0.481 (95% CI= -0.974, 0.012; P<0.1), and -0.494 respectively (95% CI= -0.857, -0.130; P<0.01). After further adjusting for health history in model 3, the effects on perceived vulnerability, fear, and anxiety again changed, showing beta coefficient of perceived vulnerability 1.292 (95% CI= 0.497, 2.087; P<0.01), fear -0.462 (95% CI= -0.955, 0.030; P<0.1), and coronavirus anxiety -0.482 (95% CI= -0.844, -0.119; P<0.01).

Discussion

After the eruption of COVID-19, symptomatic and asymptomatic carriers have been perceived as suspected groups of spreaders, and mental health has been a major concern. In pursuit of divulging the facts, this study searched and found that the persons who had more deschooled learning (about COVID-19) were highly prone to have less contact with the suspected spreaders and were more likely to have better mental health conditions. Thus, the findings remained consistent with the hypothesis that deschooled learning is effective for helping individuals to have positive behavior and better mental health.

This study reveals strong association between deschooled learning (about COVID-19) and preventive behavior among students. The findings clearly demonstrate that the students who informally knew more

about COVID-19 were highly prone to prevent direct contact from suspected spreaders such as symptomatic and asymptomatic carriers. More specifically, the individuals reject contact with those agents who have more chances to be COVID-19 positive or those having mild/acute symptoms such as sneeze, fever, cough, and breathlessness. The contact prevention happens possibly because the learning informs individuals about possible health threats and thus helps increase awareness among them.[1] Similar to this one, other studies also found associations between deschooled or informal learning and behaviors.[2][3][4][5] Therefore, during the pandemic situation, day-to-day human mobility and interpersonal risky contact can be shrunk by increasing the learning about COVID-19 among individuals.

As this study found, deschooled learning is associated with the mental health conditions of students. The findings demonstrate that those who holds more learning (about COVID-19) have less fear and anxiety related to the deadly virus. This evidently shows that deschooled learning is negatively associated with fear and anxiety. Causally and practically, when an individual becomes well informed about any pandemic like the COVID-19, he/she shows fewer mental traumas e.g., fear and anxiety, because the person knows the way to be safe and conscious within a wider context of pandemic and thus to manage his/her mental health conditions.[6] Prior studies also demonstrated associations between deschooled or informal learning and mental health of individuals.[7][8]

Interestingly, this study has found a positive association between deschooled learning and perceived vulnerability. As per the findings, the persons who learned further were more prone to consider themselves vulnerable to the pandemic. Considering themselves vulnerable, in such a way, may be effective and improves their mental health,[9] because individuals who perceive themselves vulnerable feel more need of using healthcare centers,[10] and the utilization of healthcare centers promotes their mental health.[11] Thus, other studies also evidence that deschooled learning has positive implications on perceived vulnerability which has impacts on precautionary behaviors.[12][13]

It is worth mentioning that the online schooling or learning officially started later and was not effective enough in Bangladesh. The government of Bangladesh initiated remote learning through mobile phone, television, radio and internet. The Ministry of Education organized a remote learning TV program named “Amar Ghore Amar School” meaning “My school is at my home” during school closure.[14] But the remote learning was found less effective, as a study explored that 55 percent of students (among the Grade 9 stipend recipients) did not get access to televisions, and only 43 percent having access to TV had watched the TV-learning programs.[15] Besides, for adopting the method of online classes and exams, both students and teachers faced enormous challenges. Despite its high-cost nature, high speed internet connection like broadband is not amply available in most rural areas in Bangladesh. So, the students have to depend on mobile phone data, which is costlier, but it was also ineffective for poor networks in village areas.[16] Many households cannot support their member’s or children’s education as before for getting their income plummeted.[17] 34 percent of the households cut back meals for their adolescents, nearly half of the adolescents spent less time on education compared to before, and 94 percent were engaged in household chores and childcare.[18] These disruptions interrupted the (online) schooled

learning initiated by the government, while the individualistic deschooled initiative (learning freely by oneself) at home seemed more effective.

Though every step of this study was done cautiously and carefully, it denotes some limitations. This study explored deschooled learning only about COVID-19 (transmission and cure) and its impacts on preventive behavior and mental health outcomes, but other aspects of deschooled learning may also have various effects on different outcomes. As it is a study conducted among a single cohort of population (students), the findings should not be inferred to the whole population of the country. The study used snowball sampling that is less probabilistic and generalizable in nature. The study was also limited to only those who had access to social media.

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Conclusion

COVID-19 has been a global concern due to its pandemic nature and immense threat to public health. This study demonstrated that students who have more deschooled learning are highly prone to prevent (face-to-face) contact from symptomatic and asymptomatic carriers. Similarly, individuals with higher deschooled learning are more likely to have less fear and anxiety and thus to have better mental health conditions. Likewise, this study found deschooled learning effective. Hence, current study recommends policymakers to formulate health guidelines, plans, and policies for initiating informal health literacy (IHL) that may help increase deschooled learning and informal knowledge among individuals especially during a pandemic like COVID-19 and thus help them to be safe by adopting preventive behaviors and getting prepared for fighting mental health traumas.